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WEEKLY NEWSPAPER FOR THE FARM CHEMICAL MANUFACTURER, FORMULATOR AND DEALER

Published by The Miller Publishing Co., Minneapolis, Minn.

3

Subscription Rates:
\$5 for 1 year, \$9 for 2 years

JULY 30, 1956

Accepted as Controlled Circulation
Publication at Minneapolis, Minn.

No. 31

1956 Soil Bank Agreements Cover 4.4 Million Acres; Total May Reach 6 Million

WASHINGTON — Broad interest among farmers, particularly in the Great Plains and Corn Belt states, now indicates that final sign up for participation in the soil bank programs for the 1956 crops may run as high or higher than six million acres for the acreage reserve programs of wheat, cotton, corn, rice, peanuts and tobacco.

Reporting for the week ending July 23, the U.S. Department of Agriculture says that approximately 4.4 million acres have already been registered for some segments of the soil bank operations with the heaviest acreage contributions coming from corn, wheat and cotton land in that order of importance.

A summary of substantially complete information from reporting state ASC committees for the period since the start of the sign-up in late June through July 13 discloses the following crop breakdown:

Corn—87,088 agreements for 1,846,800 acres which would qualify for payments of \$67,214,608.
Wheat—33,498 agreements for 2,372,500 acres, payments of \$16,329,000.
Peanuts—284 agreements for 9,137 acres, payments of \$114,660.
Rice—254 agreements for 6,927 acres, payments of \$349,462.
Tobacco—5,012 agreements for 12,500 acres, payments of \$2,557,324.
In addition, 51,554 agreements were reported in Kentucky, Missouri, Ne-

braska, New Jersey and Texas, but these states did not report agreements by commodities.

Reports of trade and USDA official estimates of the soil bank operations as of mid-July indicate that as much as two million acres of oat crop land was being clipped for inclusion in the corn aspects of the bank.

This means that the farmer is willing and eligible to clip oat acreage to the extent or limit of his acreage contribution. For this he obtains payments in the soil bank on the basis of the normal corn yield for the acreage now in oats at the rate of 90¢ bu. for corn. That means that clipped oat land will be compensated on the basis of normal corn yield for that land on the corn soil bank certificate of 90¢ bu. times the normal corn yield.

The attractiveness of this program financially to the Corn Belt farmer is found in the fact that in some Illi-

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Pennsalt Plans New Plant in Mexico

PHILADELPHIA — Pennsalt Chemicals plans early construction of its third plant in Mexico, William P. Drake, president, has announced. The new component will be known as Industrial Quimica Pennsalt, S.A. de C.V. and will operate in conjunction with Pennsalt International Corp. headed by Richard L. Davies.

The new installation, located near the company's agricultural chemicals plant in Mexico City, will produce chlorine, caustic soda, muriatic acid and hydrogen and is expected to become the first in Mexico to manufacture technical DDT. Robert P. Ogden, former manager of Pennsalt's Riverview, Mich., plant will direct its operations.

FDA Establishes Tolerance for Perthane

PHILADELPHIA — Rohm & Haas Co. has announced that the U.S. Food & Drug Administration has established a tolerance of 15 parts per million for its new insecticide, Perthane, on spinach, lettuce and cherries. The tolerance is the highest established for any chlorinated insecticide to date, Rohm & Haas said.

Slight Gain Expected In Fertilizer Loadings

WASHINGTON — Fertilizer carloadings during the third quarter of this year will total 57,518, according to an estimate by the Regional Shippers Advisory Boards. This would be an increase of 4% over 57,263 carloadings in the third quarter last year.

NAC to Hear Panel On What Influences Growers to Buy

WASHINGTON—Who and what influence growers to buy and use agricultural chemicals will be one of the major topics to be discussed at the 23rd annual meeting of the National Agricultural Chemicals Assn. in Spring Lake, N.J., Sept. 5-7.

The three-day meeting also will feature a presidential address by W. W. Allen, manager, agricultural chemical sales, the Dow Chemical Co., Midland, Mich., and NAC president; a report on entomological research by Dr. E. F. Knipling, chief, Entomological Research Branch, Agricultural Research Service, U.S. Department of Agriculture, and a talk on the "Industry Outlook" by J. V. Vernon, president, Niagara Chemical Division, Food Machinery & Chemical Corp., Middleport, N.Y.

More than 500 leaders in the agricultural chemicals industry, in government and in agricultural communications are expected to take part in the meeting, which will also include panel discussions of the effect of the new highway expansion program on the use of pesticides and of the latest developments under the Miller Pesticide Residue Amendment.

The question on who and what influence growers to buy and use agricultural chemicals will be answered by leading representatives of groups credited with having the greatest influence on the introduction of new materials and new practices to growers.

The panel will include: W. A. Hafert, editor, New Jersey Farm and Garden; John McDonald, president, National Association of Television

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Opportunities for Boosting Income with More Fertilizer Cited at Georgia Conference

ATHENS, GA. — Georgia fertilizer manufacturers and dealers have been challenged to show Georgia farmers the value of increased yields that can be obtained by proper fertilization.

The challenge came during the annual meetings of Agricultural Extension Service workers and representatives of the fertilizer industry held recently.

Sponsored each year by the Georgia Plant Food Educational Society and the extension service, the meetings are designed to familiarize agri-

W. C. Franklin Named Acting V-C President

Management Slate Beaten in Special Stockholder Vote

RICHMOND, VA. — William C. Franklin, president of the Royal Crown Bottling Companies at Baltimore, Md. and Washington, D.C., was named acting president of Virginia-Carolina Chemical Corp. by the firm's new board of directors. Mr. Franklin succeeds Joseph A. Howell who had served as president since 1949.

The change resulted from a proxy fight which ended in victory for the independent stockholders committee headed by Rupert T. Zickl, New York investor and member of the V-C board of directors. A special meeting of stockholders in Richmond on July 18 decided against the management slate by a tally of 211,874 to 399,613.

Six new members were elected to the V-C board of directors, and at a special meeting on July 21, the resignations of three former members were accepted by the new group. Resigning from the board were Thomas C. Boushall, president of the Bank of Virginia, Richmond; Thomas B. Byrd, secretary and treasurer of H. F. and T. B. Byrd, Inc., orchardists, Winchester, Va.; and George Champion,

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USDA Reports on Farmers' Cash Receipts

WASHINGTON — Half of farmers' 1955 cash receipts for farm commodities in the U.S. came from the sale of five major commodities—cattle, wholesale milk, hogs, cotton and wheat, the U.S. Department of Agriculture has reported.

Cattle and calves accounted for 16.7%, wholesale milk 12.2%, hogs 9.9%, cotton 9%, and wheat 5.7%. Thirty years ago cotton receipts led all the rest, cattle was second, hogs third as in 1955, wheat fourth and wholesale milk fifth.

INSECT, PLANT
DISEASE NOTES

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Research Provides Keynote for South Carolina Fertilizer Tour

CLEMSON, S.C. — Farm research and the part it plays in the South Carolina agricultural program was the center attraction during the annual South Carolina fertilizer meeting at Clemson's Edisto Experiment Station.

Some 300 fertilizer manufacturers, dealers, salesmen and other agricultural workers from throughout South Carolina and surrounding states were on hand for the affair which included a tour of the vast experimental program going on at the Edisto station.

As the groups began arriving at the station they were loaded onto trucks and conducted on tours which made stops at 11 or 12 principal agricultural research projects.

Some of the more important of these projects included new melon varieties, grassland farming, the highly boosted Coastal Bermuda grass, sources and rates of nitrogen, cotton insecticides, new cantaloupe and tomato varieties, fertilizer applications and beef cattle. Extension and research staff members were located at each stop to explain the various experiments and to answer any questions which members of the groups might ask.

Other stops included a look at new plantings of pulp and timber bamboo which is a new experiment just getting underway at the station. Representatives from the U.S. Department of Agriculture were on hand to explain some of the various uses for this new-type crop and to answer questions concerning markets and establishment of bamboo. Still another experimental demonstration that created a great deal of interest was that of liquid nitrogen. Under the direction of W. A. Balk, agricultural engineer, different types of mechanical applicators for liquid nitrogen were demonstrated.

At the completion of the tour the group visited Barnwell State Park for a watermelon cutting and barbecue and listened to some of the top agricultural figures in the state make short talks.

One of the principal speakers was O. B. Garrison, director of the South Carolina Agricultural Experiment Station. He told of the vast experimental program underway not only at the Edisto Station but at the main station at Clemson and at the five other branch stations located throughout the state. He discussed some of the most recent research findings made by station scientists and outlined briefly the state's role in agricultural research for the future.

Other speakers appearing on the program included Dr. W. A. Barnette, Clemson College trustee, Greenwood, and Robert L. Stoddard also a trustee of Spartanburg. Both men expressed deep interest in the many phases of

agricultural research which the experiment station is conducting.

Dr. M. D. Farrar, dean, Clemson School of Agriculture, spoke briefly on how Clemson is trying to aid the farmers of the state through a stepped up agricultural research program. Other speakers included G. B. Nutt, director, South Carolina Extension Service; J. W. Jones, director of agricultural teaching at Clemson, who spoke briefly on the agricultural opportunities facing our farm youth today; Dr. R. A. Mays, assistant state veterinarian; T. S. Buie, Soil Conservation Service, and Dr. G. H. Collings, head of the Clemson agronomy department.

B. D. Cloaninger, director, Clemson Fertilizer Inspection and Analysis Department, was in charge of the overall program and made arrangements for the day's activities. Assisting him were members of the Edisto Experiment Station staff and various representatives of commercial fertilizer companies.

New Edition of Labels Manual Published by MCA

WASHINGTON — The fourth revision of the "Warning Labels," Manual L-1, a guide for the preparation of warning labels for hazardous chemicals, has been published by the Manufacturing Chemists' Assn., Inc.

The manual includes a detailed definition of terms, a section on the preparation of warning labels, and illustrated sections on warning labels for 186 industrial and 92 pesticidal chemicals. The fourth revision includes new labels for 35 chemicals and revised labels for 44 chemicals.

The manual points out that labels listed are concerned primarily with chemical products for industrial use although the general principles also apply to chemicals packaged for research, pharmaceutical and consumer use. The chemicals referred to in the manual were "selected to illustrate labeling for the major types of hazards commonly encountered."

Revisions of the manual are prepared by members of the labels and precautionary information committee of the MCA. According to the MCA, six states and the territory of Hawaii have adopted labeling regulations based substantially on LAPI principles.

Copies of the 115-page "Warning Labels," Manual L-1, are available at \$1 each from the Manufacturing Chemists' Assn., Inc., 1625 Eye St., Northwest, Washington 6, D.C.

WEED SPECIALIST

BLACKSBURG, VA.—Allan Kates has been named weed control specialist at Virginia Polytechnic Institute.

American Cyanamid Net Sales, Earnings Show First Half Gain

NEW YORK—American Cyanamid Co. has announced the operating results for the first half of 1956, and K. C. Towe, president, pointed out the following:

The acquisition of the business and assets of the Formica Co. was concluded on April 16, 1956 and the consolidated earnings statement for the six months period includes the operating results of Formica for the period Jan. 1, 1956 to June 30, 1956.

Negotiations for the sale of the capital stock of Chemical Construction Corp. to Electric Bond and Share Co. were concluded on June 29, 1956 and the transfer became effective July 2, 1956. The consolidated earnings statement for the six months period reflects the exclusion of the operating results of Chemical Construction Corp. retroactive to Jan. 1, 1956.

The sale of Cyanamid's titanium dioxide pigments plant at Gloucester City, New Jersey, to the New Jersey Zinc Co. became effective May 1, 1956.

Net sales of the company and its wholly owned subsidiaries (including Formica and excluding Chemical Construction) for the first half of 1956 were approximately \$252,885,000. Net sales as reported for the first half of 1955 were \$225,357,000.

Consolidated earnings (exclusive of extraordinary gains) before tax approximated \$44,302,000 for the first six months of 1956 as against \$36,059,000 for the corresponding period last year.

The related provision for federal and foreign taxes on income was \$21,700,000 as compared with \$17,500,000 for the first half of 1955.

Consolidated net earnings, exclusive of extraordinary gains, were \$22,602,000 against \$18,559,000 for the 1955 period.

William F. Waldeck Joins Shea Chemical

JEFFERSONVILLE, IND. — The Shea Chemical Corp. has announced the appointment of Dr. William F. Waldeck to fill its newly created post as technical director.

Until late June Dr. Waldeck was director of research for the Wyandotte Chemical Corp. His major function with Shea will be to direct the development of new products and processes, according to Vincent H. Shea, president.

PURDUE FIELD DAY

LAFAYETTE, IND. — Production and management of forage and pasture crops will be featured during the annual field day Aug. 16 at Purdue University's agronomy farm, seven miles northwest of Lafayette on Highway 52.

Spencer to Ship Train of Nitrogen To Kansas Dealers

KANSAS CITY—Spencer Chemical Co. has invited a large group of Kansas dealers to its Jayhawk Works July 31 to witness the shipment of "Trainload of Nitrogen for Anaconda Dealers."

The trainload of "Mr. N" ammonium nitrate is expected to number about 80 cars, the train will leave the works the afternoon of July 31 on the tracks of the M-K-T Railroad.

Judd Wolfram, Kansas salesman for Anaconda, was instrumental in arranging the event. On the evening July 30, the dealers have been invited to be the guests of Spencer at a banquet to be held in Pittsburg, Kansas. The following day they will visit the Jayhawk Works, attend a program at which Dr. Floyd Smith, Kansas State College will speak, and watch the train pull out of the yard there. Each of the dealers will receive one of the cars from the train.

Dan K. Corell In New Nitrogen Division Post

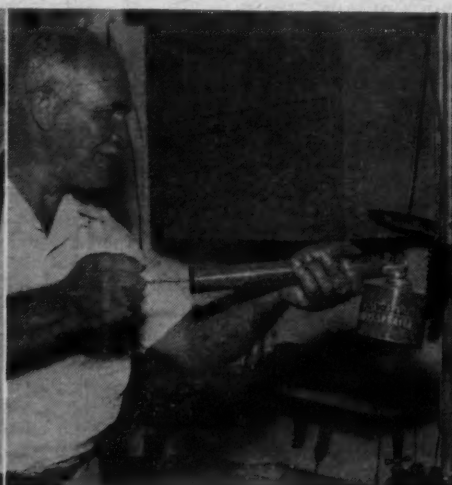
NEW YORK—Dan K. Corell has been promoted by Nitrogen Division Allied Chemical & Dye Corp., to the post of field representative in charge of sales of fertilizer manufacturing materials in the state of North Carolina.

Mr. Corell has been with Nitrogen Division since 1952, assigned to sales in the Midwest. Prior to this he was with Swift & Co., for four years in sales work and as a production supervisor in the company's fertilizer plants. A native of Virginia, he was graduated from Virginia Polytechnic Institute in 1942 with a degree in agricultural economics.

Fiber Plant Seen as Promising Oregon Crop

CORVALLIS, ORE.—A new cash crop for Oregon's coast areas may be just around the corner, according to Don Fishler, U.S. Department of Agriculture agronomist at Oregon State College. He reports that six years of trials have shown that a plant called Phormium will thrive in Coos and Curry counties and will probably grow well in other coastal counties. The plant produces a good grade of fiber that can be used in the manufacture of rope and cordage.

Mr. Fishler says more research is needed before Phormium can be recommended for commercial plantings, however. He is now in the process of selecting superior fiber yielding plants that will produce stronger and more durable fiber. Planting date, propagation, weed control and fertilizer studies are also under way.



FLY CONTROL: THEN AND NOW—Richland County, S.C., farmers got a lesson in how to kill a fly from representatives of the Gelgy Co., using Diazinon, but not until R. W. Bailey, county agent, and Frank Hampton, plantation owner, got in some clowning. Left, Mr. Bailey demonstrates a "sure-fire" method, a fly-swatter. Second picture, Mr. Hampton goes at the job somewhat

more scientifically, with a hand spray gun. Mass destruction of the pests, however, is demonstrated (third photo) by Sam McGregor, using a power spray unit in a dairy barn at the McGregor farm, where the demonstration was held. At far right, a tractor-mounted spray pump is demonstrated by Paul Hannah, left, of Greenville for W. C. Nettles, Clemson entomologist.



J. F. Corkill

U.S. Borax & Chemical Forms Four New Operating Divisions

NEW YORK—J. M. Gerstley, president of United States Borax & Chemical Corp., has announced that, at a board of directors meeting held in New York July 10, decisions were reached with respect to the organization of the new company which resulted from the merger of the former United States Potash Co. into the former Pacific Coast Borax Co.

The administrative office of the new corporation will be located in Los Angeles in the company's own office building, 630 Shatto Place. P. J. Brien will be the vice president and general manager of the new company with Los Angeles as his headquarters.

The following four operating divisions have been created:

The Pacific Coast Borax Company division, which will carry on borax manufacturing and sales in the industrial field under the leadership of J. F. Corkill, who has been appointed vice president and general manager of the division.

The United States Potash Company division which will be responsible for the production and sale of potash under Dean R. Gidney, who has been appointed vice president and general manager of the division.

The 20 Mule Team Products Division, which will handle the sales and advertising of household products, including industrial soaps and soap dispensers, manufactured by the new company. D. V. Parker has been appointed vice president of this division.

The research activities of the new company which have been organized under a separate division. G. A. Conell will be vice president and Dr. S. Taylor, director of this division. For the time being, the head office of the Pacific Coast Borax Company division will remain at 100 Park Ave., New York and that of the United States Potash Company Division at Rockefeller Plaza, New York. It is planned to locate these divisions together in new premises in New York when suitable arrangements can be effected. The principal office of the 20 Mule Team Products Division will be located in Los Angeles in the company's building and the principal office of the Research Division will be similarly located for the present.

At the board meeting of July 10 the directors authorized the construction of a research center for the company on a five-acre tract of land recently acquired in the vicinity of Anaheim, Cal. This is expected to cost, fully equipped, approximately one million dollars and to be ready for occupancy around March, 1957. Thereafter the principal activities of the research division will be directed from the new research center.

In addition to the above appointments, H. M. Albright, formerly president of the United States Potash Company, has been made a special consultant to the new company. Paul Speer was elected vice president and legal advisor and N. C. Pearson, vice president in charge of Borax sales in overseas markets.



Dean R. Gidney

R. F. Steel was elected secretary and treasurer. W. F. Dingley and W. A. Ackerman were appointed assistant secretaries and R. C. Dosta was appointed assistant treasurer of the new corporation.

California Chemical Employment Shows Gain

SAN FRANCISCO—Employment in chemical manufacturing industries in California increased by about 3½% between May of last year and the corresponding month in 1956.

From an estimated 35,900 wage and salary workers producing all kinds of chemical goods, including agricultural chemicals, the number at work increased to 37,200 by April and held steady throughout the month of May.

Most of the gain had been registered in the Los Angeles-Long Beach metropolitan area where the total in May of 1955 was estimated at 18,500, and this May at 20,400. San Francisco-Oakland area firms held at a steady 11,700 for the two months.

The production worker segment of these totals made a substantial increase in their rates of earnings. From an average weekly income of \$86.51 in May of last year, chemical factory employees received pay envelopes containing (before deductions) an average of \$91.97 each week of May.

The length of the work week remained at 41.1 hours, and the average hourly earnings increased about 7% from \$2.10 to \$2.24.

Thomas S. Reed in New Monsanto Post

ST. LOUIS—The appointment of Thomas S. Reed of Columbus, Ohio, as assistant director of sales for Monsanto Chemical Co.'s consumer products division, has been announced here.

Mr. Reed has been district sales manager for the consumer products division at Columbus since July, 1955. He will be succeeded at Columbus by William L. Cowen who has been district sales manager for the division at Philadelphia.

MECHANICAL HARVESTING

STATE COLLEGE, N.M.—New Mexico farmers mechanically harvested 41,330 acres (23%) of their 1955 crop of cotton, according to figures released by J. Leo Dirnberger, extension agricultural engineer at New Mexico A&M College. This was slightly less than the 48,698 acres (23.9%) mechanically harvested in the state in 1954.

Kentucky Conference To Hear Proposal on High Analysis Goods

LEXINGTON, KY.—A proposal for the manufacture and wide-scale introduction of two high analysis fertilizers, 10-30-20 and 0-30-30, in the non-Tennessee Valley counties of Kentucky will be discussed at the annual Kentucky Fertilizer Conference, to be held at the Guignol Theatre, University of Kentucky, Aug. 1.

The high analysis fertilizer project will be presented by S. L. Clement, chief, fertilizer distribution branch, TVA, Knoxville.

"For this special project TVA is willing to make available diammonium phosphate and calcium metaphosphate to interested manufacturers serving Kentucky," Mr. Clement has stated.

"The primary purpose of the project is two-fold: (1) to give fertilizer manufacturers an opportunity to gain experience in the use of diammonium phosphate and calcium metaphosphate and (2) to demonstrate a method of reducing cost of plant nutrients to farmers through higher analysis mixtures.

"Under the proposal this experimental activity will be offered only in Kentucky at this time."

The morning session of the conference will start at 10 a.m. under the chairmanship of G. T. Webster, head, University of Kentucky department of agronomy. It will include:

"New Developments in Nitrogen as Applied to the Fertilizer Industry," W. R. Allstatter, vice president of the National Plant Food Institute, Washington, D.C.; a showing of "What's in the Bag," National Plant Food Institute film; "ASC-Soil Bank Program," Charles A. Allen, state ASC Office, Lexington, and "The Farmer and the Soil Bank," George Corder, University of Kentucky soils specialist.

Bruce Poundstone, head of the Kentucky Department of Feed and Fertilizer, will be in charge of the afternoon session, which will open with Mr. Clement's talk. He will be followed by G. Mallory Boush, University of Kentucky associate entomologist, who will talk on "Pesticides in Fertilizers."

Weather Damages Oregon Berry Crops

PORTLAND, ORE.—Hot weather has just about put the finishing touches on this year's already-short Willamette Valley caneberry crop. Grower prices held unchanged, with red raspberries mostly at 21 cents, logans at 14 cents and blackcaps at 24 cents.

Harvest of a short blackberry crop has started. There were some reports of heat injury to vines, already damaged by last winter's freeze. A few purchases of Chehalem berries were reported at 15 to 16¢. Because of the short crop here, some marketing agencies were bringing in frozen boysens from California to meet customers' needs.

The strawberry season wound up with deliveries to Oregon processors totaling 65,856,956 lb., compared with 81,875,407 lb. last year. The USDA market news service also reported deliveries to Washington processors through last week of 10,683,298 lb., about half of the total for the same period last year.

PURDUE EXPERIMENT

LAFAYETTE, IND.—Purdue University entomologists are comparing granulars with spray materials in order to determine the best control for corn borer.

Spray and granular application methods are being compared in the experiments. In addition, various granular forms—DDT, endrin, dieldrin, aldrin, and heptachlor—are being tested against one another as are DDT, endrin and toxaphene sprays.

WHEAT CONTROLS VOTED

WASHINGTON—U.S. wheat farmers voted July 20 to accept strict government controls on marketing of their 1957 crop.

Nationally, the vote ran about 83% in favor of continuing marketing quotas for the fourth straight year. A favorable vote of 66.6% was necessary for approval. Last year, 77.3% of the 347,000 farmers who voted approved controls. The vote was lighter this year but approval ran stronger.

With controls in effect, farmers can obtain government price support loans of \$2 bu. on their wheat if they stay within the acreage assigned to each individual farm.

Study Shows Effect Of Wheat Controls On Fertilizer Usage

COLUMBUS, OHIO—The effect of the wheat price support and control program on fertilizing practices of Ohio wheat farmers has been disclosed in a study by Ohio State University researchers.

The study, conducted by Mervin G. Smith, Francis B. McCormick and Donald D. Steward, is based on information received in a survey of 152 farmers.

It shows that between 1953 and 1955 the number of farmers not applying any fertilizer on wheat increased from 5% to 11%. In the same period, about 35% of the farmers increased the total fertilization used on wheat, 7% reduced their application and 58% reported little if any change.

Between 1953 and 1955 farmers indicated a shift away from 3-12-12 and were using higher nitrogen grades, such as 5-10-10 and 10-10-10.

The lower prices received for wheat were mentioned by some farmers as reasons for reducing fertilizer usage.

In 1953 more than 20% of the farmers who reported in the study made a spring application on wheat, while in 1955 the number dropped to 18%. Of those making the spring application, the number using a straight nitrogen sidedressing decreased from 35% in 1953 to 22% in 1955, while the number using a complete fertilizer increased from 4% to 30%.

Other highlights of the survey were these:

Wheat acreage on 152 Ohio farms surveyed was reduced 27% between 1953 and 1955.

About two fifths of the farmers in the survey exceeded their allotments in 1954 and 1955.

Wheat yields were not necessarily increased as a result of quotas and reduced acreage in 1954. Yields actually were reduced mainly because of less favorable weather.

Only 10% of the farmers shifted land removed from wheat to hay and pasture from 1953 to 1955. About 12% shifted the land to corn, 27% to oats, 13% to soybeans and 9% to other small grains.

Only about 8% of the farmers indicated they would reduce wheat acreage if price of wheat dropped. About 23% would increase wheat acreage and about 66% would not change acreage.

Farmers in Ohio likely would not have voted for cross-compliance in 1955. About half of the farmers did not know what cross-compliance meant.

Canadian for Uruguay

Dr. W. E. Sackston, a plant pathologist with the Canadian government's plant pathology laboratory at Winnipeg, is in Uruguay. A specialist in the disease of oil seed crops, he will spend a year in South America working on the diseases of sunflowers. Sunflower production has grown in importance in Western Canada and more care is to be given to cultivation.

INSECT, PLANT DISEASE NOTES

Corn and Vegetables Affected by Insects

COLLEGE PARK, MD.—Populations of potato leafhoppers are variable. Yellowing of alfalfa caused by the feeding of leafhoppers was noticed in Montgomery and Carroll Counties. (July 20) European corn borer is heavy in early sweet corn in Frederick and Carroll Counties. Corn earworm eggs were found on sweet corn silks in Carroll County. Sap beetles are generally abundant in sweet corn, particularly where there has been damage by corn borers or earworm.

Light to moderate damage by Japanese beetles was observed in Wicomico and Worcester counties. Spider mites are moderate in some soybean fields in Wicomico and Worcester counties but in general infestations are light. Potato leafhoppers are abundant on limas on the Eastern Shore and on snap beans in Carroll county.

Hornworms have caused some damage to tomatoes in the central counties but are light on the lower Eastern Shore. Tomato russet mite has not been found or reported to date.

Japanese beetles have caused concern on fruits and shrubs in most sections. There has been quite an outbreak of caterpillars on roadside trees and forests in many sections. Some that have been identified are the full webworm on oak and wild cherry, the poplar tentmaker on oak and maple and the variable oak leaf caterpillar on oak and willow. These outbreaks are due mainly to the lack of natural control.—Theodore L. Bissell and Wallace C. Harding, Jr.

Spotted Alfalfa Aphid Now in Most of Kansas

MANHATTAN, KAN.—Non-economic to light infestations of spotted alfalfa aphids were observed in the following counties: Comanche, Kiowa, Pawnee, Rush, Ellis, Rooks, Cloud, Riley, Geary, Dickinson, Ottawa, Saline, and Ellsworth, the week ending July 21. Little honey dew was observed in the most heavily infested fields. (Field observations this past week confirmed that spotted alfalfa aphids now are known to be present in all of Kansas except the northern tier of counties; however, they probably may be in counties bordering Nebraska although not reported or observed yet this summer.)

The Grasshopper Control Project has been completed in Comanche, Barber, and Kiowa counties. Populations of rangeland species were reduced from counts that ranged to highs of 50 to 60 per square to counts of 2 to 7 per square yard. Although counts were originally reduced to less than one hopper per square yard in many areas that were sprayed, some apparent migration from unsprayed areas has resulted in minor population increases. Elsewhere in unsprayed rangeland in these counties threatening to severe populations persist.

Crop-feeding species, differential grasshopper, the two-lined, and lesser migratory continue crop injury in many localized areas of central and eastern Kansas. Grasshopper populations in northern Kansas are now largely adults or last instars with a few nymphs of second generation lesser migratory beginning to show up.

Beetles of western corn rootworm are reported abundant in some corn fields in Smith, north central, and in Dickinson county; central area. Feeding activity in silks of early corn was readily observed.

Observations of blister beetle activity showed rather heavy populations in some alfalfa fields in localized areas of Riley County.

Twenty-four corn fields in Jefferson

County, northeast, were examined for European corn borer infestations. Only ten of the twenty-four fields were infested and counts generally ranged 7% or less. One field had a high of 36% stalk infestation. Nearly all milo and sorghum fields that were examined in northwest and north central Kansas counties had infestations of corn leaf aphids. Populations were light in nearly all fields that were examined.—Dave Matthew.

Boll Weevil Population Light in Tennessee

KNOXVILLE, TENN.—Damaging populations of boll weevil are light all over the southern counties as the overwintered weevils have about played out. The first generation of weevils for this season is emerging now and a few have been out for a week or more. These newly emerged weevils will probably start doing damage by the middle of next week (July 30) and fields should be checked at regular intervals in order to time control operations.

Boll worm is showing up in damaging numbers in fields where insecticides for weevil control have been used. Several fields in Dyer County had heavy infestations of boll worm. Most fields have some worms in them at this time. Some damage can be expected all over the area.—R. P. Mullett.

Borers, Grasshoppers Make News in Illinois

URBANA, ILL.—There was 3% pupation of corn borer this week (July 20) in central and eastern Illinois, 4% in western Illinois and none in northern Illinois. We cannot predict the extent of second generation now, but some moths will probably emerge in central and north-central Illinois by August 1.

Moderate to severe infestations of grasshoppers have been reported from western and northern Illinois. In many instances the small grasshoppers are still concentrated in fence-rows, ditch banks, and roadsides.—H. B. Petty.

Grasshopper Potential Great in Missouri

COLUMBIA, MO.—Over a great portion of the state, we are still hanging on the verge of extensive grasshopper damage. Although some marginal damage to corn and sorghums is beginning to show up in the southwest, and alfalfa in many areas is being hurt, wide-spread and heavy damage has been largely held off by timely rains. Actually, we have never seen a time when there were so many hoppers and so little crop loss. This is particularly true throughout north-west Missouri.

We are beginning to find some webworms in alfalfa. Large numbers of

webworm moths are present in many fields. In the southern parts of the state, worms are now beginning to show up, and they quite probably will be found in north Missouri within the next couple of weeks or so.

Corn leaf aphids are quite common in grain sorghums in the southwest. In some fields, discoloring of the leaves is beginning to become noticeable.

European corn borer egg mass counts have increased considerably in extreme southeast counties especially on corn planted in May and early June. It now looks as if some of these fields will reach the economic level for spraying sometime between July 25 and August 10. If and when a field averages 100 egg masses per 100 stalks, spraying will be justified.—Stirling Kyd and Geo. W. Thomas.

Corn Borer in Iowa Reported as Serious

AMES, IOWA.—The heaviest first brood infestation of European corn borer is in east central Iowa in the area from Dubuque to Marshalltown to Muscatine. However, there are heavily infested fields in all parts of the state. The first moths of the second brood were caught in the light trap at Ankeny July 13, 3 days ahead of 1955. The catch has increased night after night since. The bulk of moths should emerge in south Iowa August 5 to 10, in east central Iowa August 17 to 20 and in north Iowa August 22 to 25. Temperatures and rainfall may alter this, of course.

Corn growth is such that quite a lot of corn will be favorable to second brood attack. As in other years, some late corn will be heavily infested. Any corn (that will make a crop) that has 100 egg masses per 100 plants is worth treating at once.

One of the most impressive aspects of a survey trip across southern Iowa is the effectiveness of chemical control. In field after field there are few or no grasshoppers. Some roadsides have no hoppers, others are swarming with 15-50 hoppers per square yard. Grasshoppers continue to hatch in all parts of Iowa perhaps as the result of rains. In general, row crops are still uninfested. Treatment of fence-rows, roadsides, ditchbanks, waste areas, pastures, hay fields now will save row crops, hay and pasture.—Harold Gunderson.

Weevils Step Up Their Activity in N. Carolina

RALEIGH, N.C.—In some of our major cotton producing counties, boll weevils have increased their activity in spite of control measures. In most counties damage has increased markedly in the untreated fields. It appears that treatment schedules are

not being closely followed in some instances, in others tobacco has taken all the attention, and in some cases farmers are growing cotton only to hold their allotment. It is most fortunate for the farmer and encouraging for the research worker when a cotton crop with a potential of two bales to the acre is left to weevils and other insects.

Bollworms are still a potential pest. The damage in many areas from 1-3% of the bolls. The following counties have reported bollworm activity: Johnston, Anson, Cleveland and Chowan.

Spider mites have increased over the past week in spite of somewhat cooler and showery weather. The following counties reported spider mite as problems in some fields: Anson, Scotland, Chowan, Union, Hertford, Wayne, Cleveland, Northampton, Johnston and Jones. Aphids were reported as being light in some fields in Jones County.

Spotted Aphid Found in Georgia for First Time

ATHENS, GA.—The spotted alfalfa aphid was found for the first time in Georgia only recently. It has been reported in counties of Henry, Stephens and Hancock. Georgia entomologists had not announced control methods for this insect by July 20.

Boll weevils are puncturing cotton squares to various degrees in Georgia. The highest reported was 78% in Elbert county and the lowest was 2% in Jenkins county. The average of fields surveyed was 30% punctured squares.—W. C. Johnson.

Kentucky Corn Growers Urged to Control Borers

LEXINGTON, KY.—J. G. Rodriguez, Kentucky Agricultural Experiment Station entomologist, has reported that second brood corn borers are developing and farmers in the state are urged to get control measures under way without delay.

The entomologist noted that in western Kentucky, hot, dry weather reduced the June corn borer brood considerably, although other parts of the state had high infestations.

Cotton Insects Cause Concern in Arizona

PHOENIX, ARIZ.—Lygus bug buildups are reported to be increasing in Pinal, Graham, Cochise, and Maricopa counties. Bollworm infestation are described as being spotted and severe in some Pinal county fields but "very prevalent" in Graham county. USDA workers in the state report that bollworms are generally increasing in all areas with egg counts very high in Pima and Pinal counties. These workers were also finding spotted infestations of cotton leaf perforators in Pinal county that are causing premature cotton bolls to open.—J. N. Roney.

Damage to Colorado Wheat Under Study

DURANGO, COL.—An unidentified disease is destroying wheat in La Plata County, Colorado. County extension officials say that heads of the wheat are turning white, indicating the food supply is being cut off to the head.

Wheat fields in the county are being examined by Jack Henderson, Colorado extension plant pathologist, and Gordon Mickle, extension entomologist, who were delegated to make a study.

Corn Borer Loss May be Higher Than 1955 Figure

NEWARK, DEL.—Loss to corn borer in Delaware may exceed that of 1955, which was rated as one of the worst infestations on record. L. A. Stearns, extension entomologist, pointed out that neglect on the part

(Continued from page 1)

and Radio Farm Directors; Blanchard Smith, vice president and director, Chipman Chemical Co., Bound Brook, N.J.; Ellsworth Fisher, extension entomologist, University of Wisconsin, Madison, and a leading pesticides dealer. The moderator will be M. R. Budd, advertising manager, Hercules Powder Co., Wilmington, Del.

The panel on the highway expansion program will be moderated by Jack Dreesen, NAC herbicide specialist. It will include Dr. C. O. Eddy, Niagara Chemical Division, Food Machinery & Chemical Corp., Middleport, N.Y., and chairman of the American Road Builders Assn., Roadside Maintenance Subcommittee on Chemicals; and R. J. McMahon, McMahon Brothers, commercial spray applicators, Binghamton, N.Y.

Panel members for the discussion

of the Miller Amendment will include Winton B. Rankin, assistant to the commissioner, Food and Drug Administration; John Coyne, assistant head, pesticide regulation section, Plant Pest Control Branch, Agricultural Research Service, USDA; Dr. George C. Decker, entomologist and head, section of economic entomology, State Natural History Survey Division, Urbana, Ill., and J. A. Noone, NAC technical adviser.

The annual meeting also will include the election of officers for 1956-57, and the election of three new members to the board of directors of the association.

MOSQUITO PLAGUE

VANCOUVER, B.C. — The worst plague of mosquitos in more than a decade has struck Fraser Valley, the big farming section east of here. Aircraft engaged by the Fraser Valley Mosquito Control Board have sprayed 25,000 gallons of DDT and furnace oil in the slough areas.

MIDDLETOWN, OHIO—Deane F. Wicks has been appointed eastern district sales manager of the Raymond Bag Corp., multiwall bag division of the Albemarle Paper Manufacturing Co., it has been announced by J. R. Clements, vice president and general sales manager of Raymond.

Mr. Wicks' eastern sales district will headquarter at 21 West St., New York.

BDSA Appointment

WASHINGTON—Appointment of Dr. U. T. Greene, Cleveland, an executive of Diamond Alkali Co., as director of the Chemical and Rubber Division, Business and Defense Services Administration, U. S. Department of Commerce, was announced July 17 by Charles F. Honeywell, BDSA administrator.

Handling Moth Activity Increase, Report Says

NCENNES, IND. — Bait trap
ures in experimental spray plots
ved a slight increase in adul
ing moth activity July 19 to 20.
rgence records show that larvae
left the fruit between July 10
16 have been emerging as adults
e July 19. Continued protection
second brood codling moth is still
led. In this area DDT, lead arsen-
and TDE are likely to leave exces-
spray residues at harvest on
eties picked early in September,
n as Jonathan and Golden De-
us, if they are used in spray ap-
ications applied after August 1.

Orchard mites continue to be troublesome in certain orchards and in certain spots within orchards.

ough larvae of red-banded leaf
have been observed feeding in
ew orchards during the past week
arrant a spray application, espe-
ly on late varieties such as Rome
uty. Growers should check their
ards carefully for control of this
t and for present activity of lar-
—D. W. Hamilton.

Course on Tank Truck Transportation of

WASHINGTON — The second course on tank truck transportation of chemicals, gases and other products will be held at Michigan State University, East Lansing, Mich., Aug. 30. The course is sponsored by Michigan State and the National Tank Truck Carriers, Inc., in cooperation with the Manufacturing Chemical Assn., Inc., and National Tank Truck and Trailer Tank Institute.

The four-day course, conducted to assure maximum safety in the tank truck transportation of chemicals, will be attended by over 100 tank truck operators, tank truck manufacturers and chemical industry traffic representatives.

One of the topics will be "Trends in Agricultural Fertilizers and Methods of Handling." It is scheduled the morning of Aug. 29.

A feature of the program will be seminars covering the needs and requirements of the chemical shipper and the tank truck carrier.

Practical lectures cover such subjects as safety; the selection and maintenance of materials used in tank construction, hoses, pumps, valves, linings and coatings; plus periods on cleaning, heating and insulating vehicles and methods of weighing and sampling.

Lecture sessions include talks on communicating technical information to operating employees, the economics of tank truck transportation and new developments in tank trucks.

Instructors and lecturers are authorities in their fields and are provided by the sponsoring associations. Registration information may be obtained from National Tank Truck Carriers, Inc., 1424 16th St., N.W., Washington 6, D.C.

NEW AEROSOL

BOSTON — Diamond Black Leaf Co., maker of Black Leaf 40 insecticide, is introducing a new aerosol, "Eptt," in the Boston area, and reports good reaction from home gardeners and from flower growers who wish to spray flowers after they have been cut for indoor arrangement.



Role of Fertilizer in Solving Our Agricultural Problems

EDITOR'S NOTE

The accompanying article is the text of a talk given by Dr. Russell Coleman, executive vice president, National Plant Food Institute, at the recent meeting of the Association of Southern Feed and Fertilizer Control Officials in Roanoke, Va.

Our present farm dilemma seems to consist of two principal problems: (1) to maintain net farm income and (2) to dispose of surplus farm commodities. Actually there is a third problem often forgotten but perhaps of even greater importance; that is, to maintain our nation's soil productivity.

The first two problems are probably short-term ones. Maintaining soil productivity, however, is a problem which will face our nation for a long time. We must remember that America can stay strong only so long as its soils remain productive.

What place does commercial fertilizer have in solving these problems? This is a question with which I am often confronted. I am sure that you as fertilizer control officials are also asked the same question.

I shall, therefore, attempt to present a logical answer by relating fertilizer to each of the three problems listed above. Let us take a first look at the relationship of fertilizer to our soil productivity problem. Recent research by agronomists suggests that commercial fertilizer may play a new and vital role in restoring and maintaining soil productivity.

I should like to use experimental results from the two oldest experimental plots in the U.S. to illustrate this point. The Morrow Plots at the University of Illinois, established in 1876, were revised in 1955 to determine whether adequate plant food applied in one year could restore the productivity of a soil depleted over seventy-nine years with intensive cropping.

The results in Table 1 show yield comparisons from the corn-oats-legume rotation. Although under this type of cropping soil depletion is slow, the data show that adequate plant food applied in one year (1955) produced as much corn as the best rotation system which had received fertilizer for the fifty previous years.

The Jordan Plots at Pennsylvania State University confirm the above results. In Table 2, comparing definite fertilizer treatments in the corn-oats-wheat-hay rotation, the results show that soil with adequate fertilizer applied only in 1953 produced as much corn that year as a similar soil fertilized during a previous twenty-one year period. The productivity of the soil seems to have been restored in one year with plant food even though it had been depleted for many prior years.

The results from the Morrow Plots led Dr. M. B. Russell, head of the agronomy department, University of Illinois, to conclude that "yield differences associated with previous management practices largely were removed by the application of liberal amounts of plant food." This conclusion has generally been confirmed by recent results from experiments at the University of Missouri and North Carolina State College.

These data from long-time experiments throw a new light on the value of plant food in maintaining the productivity of our soil. It appears from these results that plant food applied in adequate amounts may be able to restore the productivity of soils previously considered unproductive. Plant food will, therefore, play an ever increasing role in protecting the

nation's most important resource—our soil productivity.

Now let's turn our attention to the short-term twin problems of disposing of farm surpluses and increasing the farmer's income. What can plant food do to help solve these "headaches?"

A number of state experiment stations have shown recently that by using fertilizer to produce more per acre, the cost of producing each unit can be reduced. In this way farmers can realize more net return from the farm products which they sell. Using state experiment station data as a basis, our staff in collaboration with U.S. Department of Agriculture personnel has projected the effect of proper fertilization and soil management upon net farm income and its concurrent impact upon the surplus problem.

In Table 3 is projected a picture of what could happen if all the corn in the U.S. were grown according to the best known research techniques, including the proper use of fertilizer. Two basic assumptions were made in developing these figures. First, it was presumed that our nation would produce no more of a farm commodity than it could use. Second, it was assumed that our yields per acre of farm crops would be grown under the best management.

The projected figures show that our nation's average corn yield could be increased from 37 to 70 bu. per acre; that our nation's needed corn supply could thus be grown on less than half the acres devoted to this crop. By increasing the per acre yield, the average cost of producing each bushel could be lowered from \$1 to 30¢. Thus the profit from each bushel and from each acre could be increased.

Although it is difficult to estimate the total net profit from all corn

TABLE 1—Morrow Plots, 1876-1955, University of Illinois.

Corn-Oats-Legume Rotation Treatment	1955 Corn Yield Bu./Acre
No fertilizer for 80 years	63
Same for 79 years, but *fertilized in 1955	102
No fertilizer first 29 years. **MLP 50 years, plus fertilizer in 1955	101
*Treatment in 1955: N-P ₂ O ₅ -K ₂ O, 100-150-100. Unlimited plots received 5 tons limestone.	
**Manure, lime, rockphosphate.	

TABLE 2—Jordan Plots, 1881-1953, Pennsylvania State University.

Corn Yield C'n-Oats-Wht-Hay Rot'n Corn Yield Bu./Acre	1953 Corn Yield Bu./Acre
28.3 No fertilizer for 73 years	36.2
*Fertilized 1953 only	86.6
**N-P-K for 72 years	84.9
Same, plus fertilizer, 1953	85.5
*Treatment in 1953: N-P-K according to soil tests, and past history of plots.	
**Treatment for 72 years: N-P ₂ O ₅ -K ₂ O.	
	72 48 100

TABLE 3—Corn profits can be increased from less production on fewer acres in the U.S.

	Total Acreage (000's Omitted)	Product'n Bushels	Prof. per Million Acres\$	Tot. Prof. On All Acres\$
Current Production Practices	80,000	3,000,000	\$14.80¢	\$1184¢
Recommended Production Practices	35,700	2,500,000	\$42.00¢	\$1499¢

*These figures are estimates prepared by the National Plant Food Institute with the cooperation of the U.S. Department of Agriculture.
†Corn valued at \$1.40 per bu.
‡Calculated on average yield of 37 bu.; average cost \$1 bu.
§Calculated on average yield 70 bu.; average cost 80¢ bu.

TABLE 4—Cotton profits can be increased from less production on fewer acres in the U.S.

	Total Acreage (000's Omitted)	Product'n Pounds	Prof. per Million Acres\$	Tot. Prof. On All Acres\$
Current Production Practices	20,000	6,800,000	\$10.17¢	\$203¢
Recommended Production Practices	10,400	5,400,000	\$46.80¢	\$487¢

*These figures are estimates prepared by the National Plant Food Institute with the cooperation of the U.S. Department of Agriculture.
†Cotton valued at \$.314 lb.
‡Calculated on average yield of 339 lb.; average cost 28¢ lb.
§Calculated on average yield of 520 lb.; average cost 22¢ lb.



Dr. Russell Coleman

grown in the U.S., it does appear that by following this practice of using adequate fertilizers to increase per acre yield, more total profit could be realized from fewer bushels of corn than are now grown.

The same practice applies to cotton, as is shown in Table 4. Our nation's cotton yields could be increased from 339 lb. of lint to 520 lb. by proper fertilization in combination with other good practices. Thus our nation's cotton needs could be produced on about one-half the acres currently devoted to that crop.

By increasing per acre yields, the average cost of producing cotton could be reduced from 28¢ per pound to 20¢. Thus the average profit per pound and per acre could be increased materially. Thus cotton grown under the best management practices could actually yield America's farmers more net dollars from fewer bales than are currently produced.

Although this information may be academic, it does illustrate what I believe is a sound principle; namely, that proper plant food applications could be used to increase net farm income and at the same time could contribute toward solving our surplus problem.

Our plant food industry thus has an essential role regardless of the farm problem. It can be used to improve and restore soil productivity or it can be used to improve the net farm income picture without contributing to the agricultural surplus problem.

You, the state control officials, play a most important part in keeping our industry healthy. We look to you to continue to exert leadership and to help our industry meet its obligation to our nation.

Potato Insect Warning Issued in Oregon

PORTLAND, ORE.—With central Oregon's potato crop looking the best ever, fieldmen are warning growers to be on the lookout for damaging beetle infestations.

It seems the bugs are more numerous than usual this summer—both the flea beetle and the Colorado beetle, which has made its appearance for the first time. Because the plants are so far advanced, aerial spraying with DDT is about the only satisfactory method of halting this infection, fieldmen say.

ARKANSAS APPOINTMENTS

FAYETTEVILLE, ARK.—Recent appointments in the agronomy department of the University of Arkansas College of Agriculture include Dr. Marion S. Offutt as associate professor and Glenn W. Hardy as assistant professor. Among other duties, Dr. Offutt will conduct research with forage crops and Mr. Hardy will conduct fertility studies on cotton and soybeans.

Symposium on Chemicals in Food Production Set for Atlantic City

NEW YORK — The Division of Chemical Marketing and Economics is presenting a two-day symposium on "Chemicals in Food Production" at the American Chemical Society's national meeting in Atlantic City, Sept. 18-19. Hugo Riemer, president, Nitrogen Division, Allied Chemical and Dye Corp. is general chairman for this symposium. There will be four ½-day symposia.

On Sept. 18 in the morning, a symposium headed by Dr. M. F. Fogler, executive vice president, Nitrogen Division, Allied Chemical and Dye Corp., will be presented discussing important areas related to the chemical fertilizer industry.

At this symposium, invited presentations will be made by: C. Y. Thomas, vice president, Spencer Chemical Co., "The Role of Nitrogen in Our Nation's Future"; Edwin Cox, vice president, Virginia-Carolina Chemical Corp., "Phosphatic Fertilizers—1956—How Far—Where To?"; Dr. J. Fielding Reed, southern manager, American Potash Institute, "Potash in Food Production," and Dr. Russell Coleman, executive vice president, National Plant Food Institute, "Promoting Proper Plant Food Usage."

On Sept. 18 in the afternoon, a symposium on pesticides will be chaired by Dr. Carlton A. Sears, Fine Chemicals Division, American Cyanamid Co. This symposium will cover the important phases of this part of the chemical industry in relation to research and development, production, sales and end use patterns.

The following invited papers will be presented by leaders in the pesticide industry:

Dr. J. T. Thurston, director of the laboratories, Stamford research, American Cyanamid Co., "Planning Research and Development for the Successful Commercialization of Pesticides"; J. Steele Brown, production manager, agricultural chemicals, General Chemical Division, Allied Chemical & Dye Corp., "Manufacturing For the Pesticide Industry"; F. W. Hatch, manager, agricultural chemicals division, Shell Chemical Co., "End Use Patterns Present and Projected for Pesticides"; and Ernest Hart, president, Food Machinery and Chemical Corp., "Problems Related to the Successful Marketing of Pesticides."

A symposium on synthetic nitrogen materials as feed supplements will be held the morning of Sept. 19 and in the afternoon there will be a symposium on pure food and drug laws.

Control Official Emphasizes Labels as Essential to Safety

CARLSBAD, N.M.—A warning on the proper handling of economic poisons was issued at the summer meeting of the New Mexico Grain and Feed Dealers Assn. here July 15-16.

R. W. Ludwick, deputy in charge of the State Feed and Fertilizer Control Office, reminded New Mexico businessmen that a small lapse in the proper handling of an agricultural poison can be just as disastrous as a deliberate violation of the economic poisons law.

He cited one case where some insecticide, placed temporarily in a soft drink bottle for use on the premises of a store, was drunk by a small child with serious results.

"Let us make sure that all packages, bags or other containers of economic poisons bear a complete label," he stressed.

Some 50 feed and fertilizer manufacturers and dealers attended the two-day meeting. They will hold their annual meeting in Albuquerque at the Hilton Hotel Jan. 13-15, 1957.

Value of Soils Research Stressed at Field Day

CROOKSTON, MINN.—Soils research now underway at the University of Minnesota's Northwest Branch Agricultural Experiment Station is a major step toward more profitable agriculture in the Red River Valley, farmers visiting the station's annual field day were told here July 24.

William P. Martin, head of the university's soils department, outlined research studies here that touch every phase of soil improvement in the valley. Station personnel connected with this research include E. Youngquist, new superintendent of the station, O. C. Soine, agronomist and B. C. Beresford, horticulturist. These men are working in cooperation with other University agricultural experts stationed on the St. Paul campus.

Reason for this intensified research—started a year ago—is that regardless of any surplus problems farmers need to operate efficiently, Martin said.

"The farmer who has the lowest cost for each unit of production always is the most successful money-maker," he said, "and low-cost unit production will make us better competitors on the world agricultural market."

Any good soil—such as that in the Red River Valley—needs some improvement after years of cropping, Martin pointed out. A lot of fertilizer is already being applied, but more is needed. He cited last year's fertilizer applications in Minnesota—71,000 tons, up 17% from the year before. And this year, the state is running even 12% above last year's figure, he added.

Part of the research at the Crookston station is in testing new, high-analysis fertilizer. Dr. Martin said that diammonium phosphate "has great possibilities for the Red River valley."

Other research, Dr. Martin said, includes studies of soil compaction—how tightly packed soil becomes under different tilling methods—and subsoil tillage—working the soil 8 to 10 inches below the surface. There are also studies on crop moisture needs, organic matter and fallowing on different crop sequences. Fallowing means continually cultivating or digging up a field during a crop season, without raising any crop on it. It's usually done either for weed control or to help conserve soil moisture for both.

In field tours, Mr. Beresford explained potato spacing tests being conducted at the station. He was comparing 6-, 9- and 12-inch row spacings between rows. Previous results showed larger yields of Waseca and Cherokee potatoes. For varieties that tend to produce oversize tubers, Beresford said that closer spacing tends to cut down the number of large potatoes.

Allan Peterson, University entomologist, told visitors that the Colorado potato beetle—worst insect on potatoes in the Red River Valley—can be licked with chemicals. In last year's tests at Crookston, the beetles were killed equally well by three different insecticides—toxaphene, dieldrin and heptachlor.

Colorado potato beetles in the Valley are resistant to DDT, Mr. Peterson said. Yet, DDT treatment still improved potato yields in last year's tests, because it killed potato leafhoppers that were especially bothersome then.

IOWA SOIL TESTS

AMES, IOWA—Since soil testing was initiated at Iowa State College 10 years ago, about 400,000 samples have been tested by college technicians.

Grant Made for Study Of Motivation in Farm Practice Adoption

AMES, IOWA — Two Iowa State College rural sociologists have received a grant of \$3,000 from the Foundation for Research on Human Behavior to conduct a year's study on reasons why farmers adopt new agricultural practices.

Everett M. Rogers, instructor and research associate at Iowa State College, will undertake the study under the direction of George M. Beal, associate professor of rural sociology. The grant from the foundation will supplement a similar project already under way at the Iowa Agricultural Experiment Station. In this project, Mr. Beal and Mr. Rogers have been investigating personal and sociopsychological reasons related to the adoption of farm practices, and have been studying the mental process which a farmer goes through in evaluating a new farm practice. (A report on the project was presented at the annual meeting of the National Plant Food Institute last month—see page 1 of the June 18 issue of Croplife).

In their continuing research they will try to find out if the farmer changes his methods of farming simply because he believes it will bring him a larger income or result in saving of labor. They will weigh the effect of such factors as desire for community prestige, the influence of neighbors and relatives, family values and traditions. They want to know, too, how the community, neighborhood, family and friends influence the purchase of new equipment and supplies which are entailed in the adaptation of a new farm practice.

The foundation for Research on Human Behavior is a private organization at Ann Arbor, Mich., supported by individual and corporate contributions.

Mississippi Agronomists Hear Russell Coleman At Summer Meeting

HOLLY SPRINGS, MISS.—Nearly 100 Mississippi agronomists heard Dr. Russell Coleman offer a way to increase soil conservation at the annual summer meeting of the Mississippi section of the American Society of Agronomy at the North Mississippi Experiment Station near here.

Dr. Coleman, who is executive vice president of the National Plant Food Institute in Washington, said that applying fertilizer at the rates recommended by the agricultural experiment stations would increase per-acre production, reduce production costs and increase the farmer's net profit.

Dr. William L. Giles, superintendent of the Delta Branch Experiment Station at Stoneville and president of the section, presided. County Agent Ross Robison of Hernando described problems faced by farmers caught in the squeeze between increasing production costs and decreasing income. Supt. S. P. Cockett and Billy Arnold, agronomist of the Holly Springs station, explained the experiments being conducted here to find solutions to the problems of North Mississippi farmers.

TOBACCO JOURNAL

WASHINGTON—A new journal, providing an international outlet for scientific and technical articles on all phases of tobacco production and processing, has been announced jointly by the U.S. Department of Agriculture, the Land Grant College Assn. and the tobacco industry. This new publication will appear soon as the "Tobacco Science" section of the present trade journal Tobacco. It will include scientific and technical articles and reports on tobacco in the fields of chemistry, physics, engineering, botany, physiology, agronomy and soils, pathology, entomology and economics.

Medfly Research Being Developed by Florida Station

GAINESVILLE, FLA.—A research program designed to answer problems facing growers and processors with the coming of the next fruit and vegetable season and to supply as quickly as possible information needed in the present Mediterranean fruit fly eradication program has been set up by the University of Florida Agricultural Experiment Station.

Dr. John W. Sites, assistant director and head of the department of fruit crops, says emphasis will be placed on fumigation as related to citrus, mangos and pink tomatoes and on residue studies with malathion, parathion, ethylene dibromide and methyl bromide. EDB and methyl bromide are now being used in fumigating host fruits shipped from the regulated area.

Dr. Sites says research has been initiated also dealing with Florida's major agricultural crops and basic to a control program for the Medfly, should this ever become necessary.

The research program was set up at a recent conference with experiment station staff members, State Plant Board workers, and representatives of the U.S. Department of Agriculture in Washington and at Miami Medfly headquarters.

Dr. D. O. Wolfenbarger, entomologist at the Subtropical Station, Homestead, who first identified the Mediterranean fruit fly in the current infestation, is presently stationed at Miami Medfly headquarters as liaison between control and research agencies.

Cotton Council Gives Support to New Research Program

MEMPHIS—The National Cotton Council has thrown its full support behind a new government research program authorizing \$100 million additional funds for utilization research aimed at expanding markets for agricultural commodities.

Wm. Rhea Blake, council executive vice president, testified before a Senate Agricultural Subcommittee on a bill introduced jointly by Senator Capehart (R., Ind.), and 33 other senators. He stressed need for agriculture achieving parity of research with industry, in order for the farmer to achieve parity income.

He pointed out that research agriculture spends only one fourth as much as industry per sales dollar.

For cotton, research is basic to everything involved in expanding markets. Cotton research must be aimed at reducing cost and improving quality in producing the fiber, as well as in producing products made from the fiber, it is pointed out.

The additional expenditure of \$100 million a year authorized by the Capehart Bill would, if realized, double present federal expenditures for agricultural research.

Mr. Blake commended the imaginative, dynamic approach in this proposal, pointing particularly to the fact that the size of the authorization is realistically in accord with the tremendous job to be accomplished.

On this point, however, Mr. Blake said that the principal difficulty in the past has been in obtaining appropriations already authorized by Congress. He stressed the necessity for developing, on the part of both the Executive Branch and the Congress, a favorable attitude toward actually making available the funds authorized. He suggested changes to improve the bill regarding organization, administration, personnel, and the handling of research through contracts and grants.



Peter J. Stupin

Peter J. Stupin Joins Pennsalt Western Sales Group

TACOMA—Appointment of Peter J. Stupin to western sales group has been announced by A. F. Bixby, manager, agricultural chemicals, Pennsylvania Salt Manufacturing Company of Washington.

Mr. Stupin received his degrees in agriculture from UCLA in 1941, after which time he served with the United States Navy during World War II. He later served as the research director for the Calavo Corp. before joining Pennsalt Chemicals.

Mr. Stupin resides in Monterey Park, Cal. and will establish his headquarters at Pennsalt Chemicals Los Angeles offices from which point he will cover southern California.

First Half Sales, Earnings of Diamond Set New Record

CLEVELAND—Sales and earnings of Diamond Alkali Co., Cleveland, set new records in the first half of 1956, it was reported here by John A. Sargent, president.

"Reflecting the benefits of a steady, substantial growth pattern that has marked the company's operations and activities in recent years, both sales and earnings for the six months ended June 30, 1956 climbed to the highest half-year and second-quarter levels in Diamond's 46-year history," Mr. Sargent said.

Net sales of Diamond chemicals for the current six months totaled \$61,609,242 compared to the previous high of \$53,660,322 a year ago, representing an increase of 15%.

Net income for the first half of 1956 was \$5,550,271, which, after preferred stock dividends, is equivalent to \$2.11 per common share for 2,604,351 shares outstanding. This represents a gain of 37% over the previous high in 1955 of \$1.53 per share computed on the same number of shares.

Second-quarter 1956 set sales totaled \$31,752,755 against the former second-quarter high of \$29,189,278 in 1955, a gain of 9%. Net earnings for the second quarter of the current year amounted to \$2,716,800, or \$1.04 per share on 2,604,351 shares, compared with \$2,412,668, or \$.93 per share for the corresponding 1955 quarter.

Commenting on Diamond's first-half 1956 operations, Mr. Sargent called the gains in sales and earnings "encouraging signs resulting from continuing improvements in most phases of company operations."

The mid-year results, Diamond's president added, "likewise reflect the modestly profitable operation of the Company's Muscle Shoals Plant, which, in the first half of 1955, was penalized by substantial start-up expense and limited operation."

Hercules Announces Details of Tall Oil Fractionation Plants

WILMINGTON, DEL. — Hercules Powder Co.'s two new tall oil fractionation plants are expected to yield 115,000,000 lb. of rosin and fatty acids out of the 140,000,000 lb. of raw material processed a year, the company has announced. One of Hercules' two new plants, at Franklin, Va., is now on a shake-down production basis.

The second tall oil plant at Savannah, Georgia, identical to the Franklin plant, is expected to start production at the end of the third quarter.

Dr. John H. Long, general manager of Hercules' paper makers chemical department, said the two plants are designed for an 80% product yield of rosin and fatty acids. "How-

ever, these are flexible distillation columns capable of separating crude tall oil, either into the two principal products, or any desired combination," Dr. Long said.

ESSAY WINNER

SAN MARINO, CAL. — Richard Davies, a student of vocational agriculture at Fullerton Junior College, Fullerton, Cal., has been chosen for the \$100 cash grand award, in the 1956 California fertilizer essay contest. Sponsor each year is the Soil Improvement Committee, California Fertilizer Assn., and the contest is open to all regular students of vocational agriculture in California's two year junior colleges. The title of this year's contest was "Use of Fertilizer on Pasture and Rangeland." In addition to the grand award in cash, Mr. Davies' school will have possession of the committee's perpetual trophy for the ensuing year.



David N. Hauseman



W. N. Watmough, Jr.

Davison Sets Up Operating Divisions On Product Lines

BALTIMORE — In a general realignment of organization functions and responsibilities, designed for "maximum efficiency in a period of rapid expansion," Davison Chemical Company Division of W. R. Grace & Co., has created new operating divisions along product lines, in charge of general management executives reporting to W. E. McGuirk, Jr., executive vice president, and Marlin G. Geiger, president.

Heading the chemicals, agricultural chemicals and mixed fertilizer divisions as vice presidents and general managers are, respectively, F. C. Nicholson, formerly vice president for chemical operations; David N. Hauseman, formerly vice president for marketing, and W. N. Watmough, Jr., who remains in essentially his previous position. Each of the divisions is an autonomous unit with its own functional services such as engineering, traffic, financial, purchasing and industrial relations.

R. D. Goodall is advanced to general manager of Davison's petroleum catalysts group. He was formerly assistant vice president in marketing. A. R. Worrall, formerly manager of Davison's Curtis Bay Works, heads industrial chemicals, and D. P. Barrett, formerly sales manager of industrial chemicals, is in charge of rare earths.

Under Mr. Goodall, Page Edmunds II continues as sales manager for petroleum catalysts; W. R. Fullem, formerly assistant to Mr. Nicholson, is production manager. Mr. Worrall has L. C. Reid, formerly assistant sales manager for industrial chemicals, as sales manager, and A. W. Hemphill as production manager. Assisting Mr. Barrett are R. L. Stone on sales and Richard M. Mandle on production. Both are vice presidents of Davison's affiliate, Rare Earths, Inc.

Under Mr. Hauseman in the agricultural chemicals division, J. M. Harris is assistant general manager. He was formerly manager of the company's phosphate rock division in Florida. William Caspari, Jr., is sales manager of agricultural chemicals, approximately his previous post.

Assisting Mr. Watmough is A. C. McCall as executive officer. He was formerly branch plant manager at Joplin, Mo.

Change in the branch plant organization of the mixed fertilizer division eliminates the district manager offices. Instead, branch managers report directly to Baltimore headquarters.

John W. Ground III is manager at Joplin and responsible also for operations of the New Orleans sales office, and plants at Tulsa, Okla., Trenton, Mo., and Perry, Iowa. R. C. Simms, manager at Charleston, S.C. has responsibility also for plants at Spar-

tanburg, S.C., and Wilmington, N.C. The latter point is directly under H. G. Barclay, appointed assistant manager to Mr. Simms.

Vance G. Vasbinder is transferred from Lansing, Mich., to Columbus, Ohio, to be assistant to M. C. Evans, manager at the latter point. Their responsibility is for the plants at Alliance and Findlay, Ohio, in addition to Columbus.

E. S. Jackson, manager at Nashville, has appointed Charles T. James as sales supervisor.

Spencer Sales Increase In Firm's 4th Quarter

KANSAS CITY, MO. — Increases in fourth quarter sales and earnings were reported by Spencer Chemical Company at the regular quarterly board of directors' meeting on July 24. Net sales in the three months ended June 30, 1956, the fourth quarter in its fiscal year, amounted to \$13,050,000, compared to \$9,567,000 in the same quarter of 1955, the company reported. This increase was largely the result of a higher volume of sales of polyethylene plastic.

Net income in the quarter amounted to \$1,948,000, equivalent to \$1.60 per common share after preferred dividends, compared to \$1,508,000, or \$1.20 per common share in the 1955 quarter.

The board of directors also declared a quarterly dividend of 60c per share on common stock and the regular quarterly dividend of \$1.05 per share on the 4.20% preferred stock, both payable September 1, 1956, to holders of record August 10, 1956.

Minneapolis Bag Plant Wins Safety Award

MINNEAPOLIS — In recognition of its outstanding record for plant safety, the Chase Bag Co., Minneapolis branch has been awarded the annual company safety banner.

At ceremonies held recently in the plant, the award was presented to branch personnel by R. N. Connors, executive vice president of Chase Bag. It was accepted by John R. Hale, manager of the Minneapolis facility where over 100 workers make Chase multiwall paper bags, burlap, cotton and Saxolin open mesh bags.

The Minneapolis plant was built by Chase in 1948, and is the newest of its 15 manufacturing plants.

Mr. Connors stated the winning branch experienced only one lost time accident during 1955. Prior to this time, Chase personnel in Minneapolis were also close contenders for safety awards in 1952, 1953 and 1954. Only one lost time accident was experienced in each of the years 1952 and 1953, and there were no accidents in 1954.

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Selling Ideas

Feedstuffs, an associated publication of Croplife, has prepared a 16-page Merchandising Handbook for dealers interested in getting a greater volume of sales and profits from animal and poultry health products. In the Handbook will be found practical merchandising ideas successfully used by retail stores.

20c per copy

Send coins if order is under \$1

PRICE DISCOUNTS are available to firms desiring to use their own advertisement on the back cover on orders of 1,000 or more copies. Get complete details. Write to:

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A SPECIAL CROPLIFE DEPARTMENT TO HELP RETAILERS IMPROVE MERCHANDISING KNOW-HOW

'Country Boy Approach' to Selling Helps New Mexico Retail Dealer Triple Sales

By JESS F. BLAIR
Croplife Special Writer

The farm store of the Lovington Co-op Gin, Lovington, N.M., has tripled its business in farm chemicals the last three years. The manager, H. W. Lawler, is a man who talks very little about himself, but his record has been considered outstanding by the directors of the company.

Taking over the store in 1950, he has pulled it out of the red and pushed sales considerably higher each year. There has been some expansion in the use of farm chemicals in the area but not more than 25%. There has also been stiff competition from other firms in the area.

The feed and seed business has been profitable, but the fastest growing part has been the sales of insecticides, fertilizers and irrigation equipment.

"I suppose fertilizers are our biggest seller," he said, "but insecticides are not far behind. Farmers have a horde of bugs and worms now, and it's our job to sell products that will do the farmer the most good at the least cost."

Mr. Lawler has been very active in promoting fertilizers. Partly through his efforts, farmers who never used fertilizer before are now putting on from 200 to 300 lb. per acre. Mostly it is 16-20-0 and 13-39-0, though other formulas are used on special crops.

Mr. Lawler has a sort of country boy approach to selling and never learned the fast-talking lingo of a professionally trained salesman. Mostly he gets in his pick-up and heads for the country to see what is going on. He stops along the route to talk to farmers in the field or maybe drink a cup of coffee with them at the house.

Talk usually gets around to crops and quite naturally he finds out what the farmer is doing. Maybe it's nearly planting time, so the farmer will need fertilizer. Perhaps he has seen a horde of moths flying over the crops. This means an insect infestation is coming, so Mr. Lawler knows the owner should be getting his poison rigs ready and lay in a supply of insecticides.

"Maybe that's not the way to do it," he said, "but having been a farmer myself I just can't stay out of the fields. I get acquainted with new people, renew friendships with farm folks I already know. Evidently it helps because a big part of our customers have come to us as a result of personal contact with them on their places."

Knowing what the farmer is doing and needs is not enough, though. A dealer must know what to use for every type of insect, what kind of fertilizer is recommended and how much. This is the part that Mr. Lawler had to learn, and he studied it in various ways. He read bulletins and magazines and worked with entomologists and company fertilizer experts.

Because he does keep up with latest developments, he was able to get started with a new systemic pesticide this year. In reading of their effectiveness on cotton down in central Texas, he decided they might be worthwhile in the irrigated part of eastern New Mexico.

He soon contacted a manufacturer

and made arrangements to use whatever amount the farmers would take. Then he began to talk systemics to his customers, and soon had several of them willing to make small trials.

As a result he put out a ton of cotton seed this last spring that had been impregnated with the systemic poison.

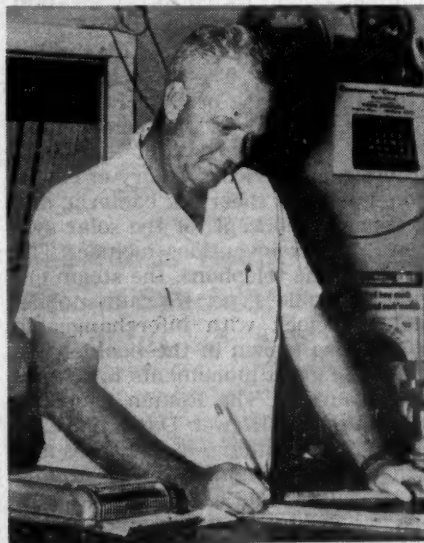
The seed went out to about two dozen farmers in small 50 and 100 lb. lots.

"It seems to be working as expected," Mr. Lawler said, "and so far farmers are satisfied with it. Next year if the present interest continues to increase, we may put out five or ten times as much seed."

Mr. Lawler is a great hand to try new ideas and products if they have been backed up by sound research. But he doesn't go overboard on every new thing that comes along until he is convinced it will make money for the farmer.

The business has grown until he now has three full time employees

(Continued on page 14)



NEW MEXICO DEALER — Shown above is H. W. Lawler, manager of the farm store of Lovington Co-op Gin, Lovington, N.M., who has built up a fast-expanding farm chemicals business.



SHOP TALK

OVER THE COUNTER

FOR THE DEALER

By EMMET J. HOFFMAN

Croplife Merchandising Editor

The lawn and garden fertilizer market is a sizable one which is 50% untapped, according to California survey results for 1955.

Of the 87,000 families in the Sacramento area maintaining lawns and gardens, only 48,977 bother to fertilize. Of the 48,977 families, 93% use dry fertilizers, it is reported in a survey made by the daily newspaper, the Sacramento Bee.

Of the 50,000 families in the Fresno area maintaining lawns and gardens, considerably less than half fertilized them. The number using fertilizer was 21,599. Again, dry fertilizer was preferred, in this instance by 94% of the users. The Fresno poll was conducted by the Fresno Bee, also a daily newspaper.

A third newspaper, the Modesto Bee, made a survey which showed that 18,439 families had lawns and gardens and only 8,292 families bought fertilizer. The dry form was again preferred by 94% of the users.

Also interesting is the finding that in all three cities one brand of fertilizer led in popularity. This brand was purchased by 32% of the families in Sacramento and Fresno and 34% of the families in Modesto. The remaining business was shared by numerous other brands, with the most popular second choice getting 15% of the sales at Sacramento.

Pesticide Surveys

Relatively higher percentages of families use pesticides in five California cities, the various surveys showed. It is estimated that the Sacramento area has 104,000 families and of these 55,873 or 54% used pesticide sprays and dusts to fight insects. Pesticide users at Fresno totaled 49% of the families and at Modesto 52%. Almost six out of 10 families in the San Jose area, or 40,734 families of an estimated 70,000 purchased pesticides.

At Long Beach a survey showed that 61,826 families, or 44%, purchased pesticides last year.

The leading pesticide brand was preferred by 52% of the families at Sacramento, 42% at Long Beach and 65% at San Jose. The same brand also led in popularity in Fresno and Modesto.

Fertilizer and pesticide dealers have

big markets still waiting for them to tap, it is evident from the California surveys. Furthermore, there is the likelihood that present fertilizer and pesticide users are not using these products in sufficient quantities, representing an additional market potential.

Weekend Special

A "weekend special" is a dependable attraction for customers, believes Joseph Garfinkle, owner of Garfinkle's Feed Store, Oakland, Cal.

Mr. Garfinkle prepares a four-inch display advertisement every week for the local newspapers. The advertisement runs Fridays and is intended to be a Saturday traffic puller.

One week a coupon in the advertisement might be worth 10¢ on a dollar purchase. Other weeks he might reduce the price of fertilizer, feed or seed by 25¢ or so on a sack.

Invariably, these advertisements produce considerable traffic, Mr. Garfinkle says, and after many months of experience with this system, he plans to continue it indefinitely.

Increased Sales

Tested merchandising techniques will aid the farm chemical dealer to hold and expand his market. Techniques successfully used by supermarkets can in most instances be adopted by the farm chemical store and one San Francisco supermarket operator

(Continued on page 11)

IN CALIFORNIA TESTS

Phosphate Increases Vegetable Yields

SAN MARINO, CAL.—Phosphate fertilizers markedly increase the yield of several vegetables produced on phosphate deficient soils in Imperial Valley, reports the California Fertilizer Assn. This statement is based upon fertilizer trials now completing their second year in the Meloland area by the Department of Vegetable Crops, University of California.

Dr. O. E. Lorenz, professor of vegetable crops, Riverside, Cal., reported to the fourth annual California Fertilizer Conference held at Riverside, on yields of five vegetables at the close of the 1954-55 growing season, and on the three varieties which had been harvested to that date this year.

He said that during the first year lettuce and carrots gave progressively better yields with higher phosphorus applications, up to 180 lb. of actual P₂O₅ per acre, the heaviest application in the test. Cabbage and onions responded best to the initial application of 60 lb. P₂O₅ per acre. Cantaloupes did best on 120 lb. P₂O₅ per acre.

Dr. Lorenz presented tables showing that in 1954-55 cabbage was a complete failure on the unfertilized plot. The relative yield was 0 with no fertilizer, 99 with 60 lb. P₂O₅ per acre, 105 with 120 lb. and 100 with 180 lb.

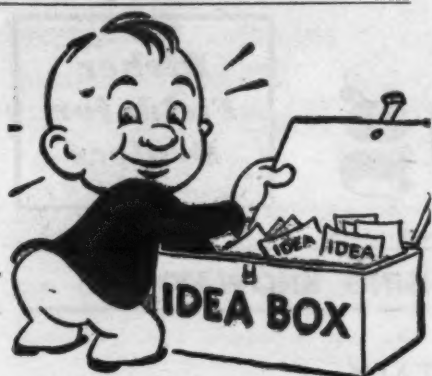
Lettuce on the unfertilized plot had a relative yield of 13, compared

with 83 with 60 lb. P₂O₅, 94 with 120 lb. and 100 with 180 lb.

Relative yields of other vegetables at the 0, 60, 120 and 180 lb. P₂O₅ levels were: carrots 73, 78, 81 and 100; onions 79, 90, 98 and 100; cantaloupes 85, 87, 100 and 100.

Dr. Lorenz presented data from 1955-56 tests showing that relative yields of lettuce from the four levels of P₂O₅ were 0, 63, 75 and 100. He pointed out that lettuce still gave consistent increases in yield as more phosphorus was applied up to the top application of 180 lb. an acre.

The increased carrot yield due to phosphorus application in 1955-56 was not as marked as in the previous year. Cabbage gave a marked increase following the 60 lb. level.



What's New...

In Products, Services, Literature

You will find it simple to obtain additional information about the new products, new services and new literature described in this department. Here's all you have to do: (1) Clip out the entire coupon and return address card in the lower outside corner of this page. (2) Circle the number of the item on which you desire more information. Fill in your name, your company's name and your address. (3) Fold the clip-out over double, with the return address portion on the outside. (4) Fasten the two edges together with a staple, cellophane tape or glue, whichever is handiest. (5) Drop in any mail box. That's all you do. We'll pay the postage. You can, of course, use your own envelope or paste the coupon on the back of a government postcard if you prefer.

No. 6443—Soil Fumigant

A product, called by the trade name, Vapam soil fumigant, is being offered by the Du Pont Company. According to company spokesmen, the chemical when applied to moist soil before planting, forms vapors which kill or suppress many types of undesirable organisms, including weed seedlings, certain soil insects, fungi and nematodes. It is recommended as a pre-planting treatment for soil in plant propagation beds (ornamentals and vegetables), in new turf areas and in fields for ornamental plants. The product can be mixed with water and applied as a surface spray with a sprinkling can, hose proportioner or overhead sprinkler. Additional wetting after application seals the chemical in the soil. It may also be placed at depth in the soil by being sprayed on the plow sole or injected with standard fumigation equipment. To secure more complete details check No. 6443 on the coupon and mail it to Croplife.

No. 6444—Potash Mining Booklet

The National Potash Co. has prepared a booklet describing its project to produce potash near Carlsbad, N.M. Titled, "A Basic New Source of a Basic Plant Food," the booklet tells

how the company will begin mining in January, 1957, muriate of potash from its \$19,000,000 plant with an annual capacity of 400,000 tons. Also described is the company's offer of assistance in the form of free technical service to assist fertilizer manufacturers in the problems of granulation and in other production difficulties. The booklet may be secured by checking No. 6444 on the coupon and mailing it to Croplife.

No. 6445—1-Ton Shipping Containers

A new 24-page booklet describes 1-ton shipping containers produced by the Columbiana Boiler Co., Steel Plate Fabricating division, for handling liquefied and compressed gases, and chemicals such as liquid chlorine, anhydrous ammonia, sulphur dioxide and other commodities requiring ICC specification containers. The booklet includes recommendations of the Chlorine Institute for safe handling, with a special section on employees' protection. Institute tables and charts give characteristics of liquid chlorine, including density and pressure at temperatures F., and solubility in water and other solvents. Plant photos illustrate the manufacture and usage of the firm's containers, storage vessels, galvanizing and tinning kettles and motor cargo, portable and skid tanks. A special feature describes

the delivery and use of anhydrous ammonia as soil fertilizer with Columbiana containers. To secure the booklet check No. 6445 on the coupon and mail it to Croplife.

No. 6446—First Aid Catalog

A new 6-page first aid catalog is available from the E. D. Bullard Co. With it comes a card titled, "Instant Guide to First Aid." It contains information on first aid treatments and folds to fit into a wallet or purse. The catalog contains a listing of over 100 unit packs, photographs of kits, catalog numbers and descriptions of kits and units for ordering purposes. Check No. 6446 on the coupon and mail it to secure the literature.

No. 6447—Science in Industry

Six scientific principles and six inventions that reshaped civilization are described in "Science in Industry," a new booklet issued by the Du Pont Company. The principles are Einstein's theory of relativity, Lavoisier's analysis of the composition of air, Newton's law of universal gravitation, Darwin's theory of evolution, Pasteur's theory of bacteria, and Copernicus' concept for the solar system. The six inventions include: The airplane, the telephone, the steam engine, movable type, the automobile, and the clock with interchangeable parts. Also shown in the booklet are six of the great monuments to science and invention: The Roman aqueduct at Nimes, the Hoover Dam, the Empire State Building, the Panama Canal, the Savannah River atomic energy plant, and a Detroit automobile assembly line. To obtain the booklet check No. 6447 on the coupon and mail it to Croplife.

"good management and use of fertilizers on native and introduced grasses," at the Phillips agricultural demonstration project, Foraker, Okla. Secure the booklet by checking No. 6435 on the coupon and mailing it to this publication.

No. 6438—Turf Fungicide

The Upjohn Co. has announced a new turf fungicide, Actidione RZ, for the control of large brown patch, melting-out, fading-out, dollar spot and pythium. Company officials say that the product, when primarily tested on golf courses with the cooperation of golf course superintendents, provided in excess of 95% control of the five major diseases. Excellent protective and curative properties were claimed in widespread geographical locations. Secure more complete details by checking No. 6438 on the coupon and mailing it to Croplife.

No. 6439—Iron Deficiency Booklet

A revised booklet entitled, "Perma Green Iron 135," has been prepared by the Refined Products Corp. The booklet states that "iron deficiency in plant life is present in nearly every region of the earth" and claims that the company's corrective product is an "effective organic iron chelate for all soils." It is recommended for vegetables, fruit, flowers, shrubs, trees and turf. Sections of the booklet are devoted to the "what, why, where and how" of the product, suggestions for use, application methods, color reproductions showing adequate and deficient minerals in soils. On the last two pages containing photographs are found reproductions of transparencies showing results of foliar application with an iron chelate. Secure the booklet by checking No. 6439 on the coupon and mailing it to Croplife.

No. 6434—Vermiculite

Vermiculite as a fertilizer conditioner is described in a new publication of the Vermiculite Institute. The institute's announcement states: "This inert, fireproof mineral weighs only 10 lb. per cubic foot, contains less than 1% moisture, and is non-hygroscopic. It contains about 27½ million particles per pound, is highly absorbent, and is packed in lightweight bags that make for easy handling and storage." The material is processed in some 40 plants in the U.S. and Canada. "Vermiculite in Agriculture," with a special insert for fertilizer manufacturers, is available without charge. Check No. 6434 on the coupon and mail it to Croplife.

No. 6442—Promotion Program

Information about the new marketing program for its products is available from Diamond Black Leaf Co. The promotion centers around more than a score of printed pieces suitable for distribution to the prospective buyer and user and scheduled on radio, television and in newspapers and magazines. A number of new products and package designs are also announced by company officials. To secure more complete information about the program, check No. 6442 on the coupon and drop it in the mail.

No. 5457—Bag Reinforcement

A new sewn multiwall paper shipping sack featuring reinforced end construction has been announced by Bemis Bro. Bag Company. The reinforcement consists of strips of kraft paper between plies at the bag's top and bottom, said to give the effect of an extra ply at the points where most sewn multiwall bag breakage occurs. The new bags, called "Strength-end" by the company, have been undergoing tests with a variety

Send me information on the items marked:

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|--|---|
| <input type="checkbox"/> No. 5457—Bag Reinforcement | <input type="checkbox"/> No. 6440—Soil Treatment |
| <input type="checkbox"/> No. 5483—Mixer Bulletin | <input type="checkbox"/> No. 6441—Spray |
| <input type="checkbox"/> No. 5490—Time-zone Guide | <input type="checkbox"/> No. 6442—Promotion Program |
| <input type="checkbox"/> No. 6434—Vermiculite | <input type="checkbox"/> No. 6443—Soil Fumigant |
| <input type="checkbox"/> No. 6435—Booklet on Grasses | <input type="checkbox"/> No. 6444—Potash Booklet |
| Ammonia | <input type="checkbox"/> No. 6445—Containers |
| <input type="checkbox"/> No. 6438—Turf Fungicide | <input type="checkbox"/> No. 6446—First Aid Catalog |
| <input type="checkbox"/> No. 6439—Booklet | <input type="checkbox"/> No. 6447—Science Booklet |

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Also Available

The following items have appeared in the What's New section of recent issues of Croplife. They are reprinted to help keep retail dealers on the regional circulation plan informed of new industry products, literature and services.

No. 6435—Booklet on Native Grasses

Section two of a booklet series on pasture and range plants has been published by the Phillips Petroleum Co. Entitled, "Native Grasses, Legumes and Forbs," the 40-page booklet describes 32 plants and pictures them in full color. The introduction states that the company's goal with the booklet is "to broaden the knowledge of pasture and range plants." It adds that "all of us depend far more than we realize on range vegetation as the basic source of our own and of our nation's strength, vigor and vitality." An invitation is issued to visitors to observe the results of

of products. The reinforcing strips in the bags are spot pasted to adjacent plies of paper to hold them in position, making them an integral part of the bag construction. Thus, the strips may be applied to both sewn valve and sewn open mouth bags. To secure more complete details check No. 5457 on the coupon and mail it to this publication.

No. 6441—Spray

A new form of calcium arsenate which can be applied as a low gallonage spray instead of a dust has been developed by General Chemical Division, Allied Chemical & Dye Corp., for cotton boll weevil control. According to company officials, growers using standard cotton spraying equipment can now get the full benefit from calcium arsenate since the spray form is less wasteful, gives longer residual effect, and better insect control than the conventional dust which has been used for generations. The new product is claimed to eliminate drifting arsenical dust and is being sold under the name of General Chemical high suspension calcium arsenate. It is said to be compatible with other cotton insecticides and can be used in combination sprays to control a variety of pests. To secure more complete details check No. 6441 on the coupon and mail it to Croplife.

No. 5490—Time-Zone Guide

A guide to time-zone and daylight saving time differences in the U.S. has been published by U.S. Industrial Chemicals Co., division of National Distillers Products Corp. The time map measures 8½ by 7¼ in. and is of a size that will fit conveniently under a desk glass or on a bulletin board. It shows at a glance the states using daylight saving time and also the states in which most cities of 25,000 population or over use daylight saving time. The guide is available without charge. Check No. 5490 on the coupon and mail it to secure the guide.

No. 5483—Mixer Bulletin

An 8-page bulletin illustrating its horizontal mixer which features "triple action mixing" has been published by the Strong-Scott Manufacturing Co. The mixer is claimed to be ideal for mixing wet or dry materials and blending those of pulverized or granular sizes. Among the industries which have application for the mixer are the feed and fertilizer trades. The bulletin, No. TSB6-538, is available without charge by checking No. 5483 on the coupon and dropping it in the mail.

No. 6440—Soil Treatment

A new method of treating soil for pH and soil structure is described in a folder entitled "Agricultural Ferric Sulfate" published by Stauffer Chemical Co. The folder contains complete how-to-use instructions. It claims that ferric sulfate—which has been used as an industrial chemical for many years but only recently has been found to be a valuable agricultural aid—has three basic functions: Because it is essentially acidic, it corrects soil alkalinity; it supplies iron for soil enrichment; and, the ferric hydroxide and ferric oxides which it forms in the soil, coat individual soil particles so that they do not clod or pack. The folder is obtainable, without charge, by checking No. 6440 on the coupon and mailing it to Croplife.

INFESTATION UNDER CONTROL

DENVER—An aerial spraying program recently brought a grasshopper infestation on 22,000 acres in Douglas County under control.

OVER THE COUNTER

(Continued from page 9)

tells just how he is achieving his desired 70% increase in sales of pesticides, fertilizers and related gardening items.

The chief reason for the super-market's spurt in farm chemical sales is an impressive front-of-store gondola-end display featuring giant size packages of insecticides and fertilizers, the operator says.

A monster replica of a garishly colored garden snail tops off the display. A sign in front of the gondola-end reads, "Look—No Bugs!"

40% Profit Margin

Since the profit margin on most gardening items runs around 40%, the super is delighted to see the eager response of customers to this particular promotion, the store official says. Margin on the smaller size packages is even higher, he continued.

The 70% increase figure is based on what the unit's record was last year with a similar promotion. The official states that year around volume on gardening items—even from the shelves—is excellent in the San Francisco area of almost continual garden and lawn care. In spring and early summer, with proper merchandising, "volume is tremendous," he claims.

Because of the high margin on this merchandise, it is given a good traffic spot near the front of the store facing checkouts and next to household insecticides which have an excellent turnover. The household insecticides section is 18 ft. long, and five shelves high.

The special gondola-end display occupies a 4x5-foot space and is 6 ft. high. The giant-size packages forming its base are not ordinarily shown in the shelf section but are brought out for warm-weather sales.

Lime Boosts Yields, Missouri Specialist Says

COLUMBIA, MO.—L. E. Willoughby, extension crops and soils specialist at Kansas State College, Manhattan, said that at Columbus in southeast Kansas \$20 an acre spent for lime over a 24-year period has paid off with an increase over non-limed soil of 1.17 tons of alfalfa per acre; 10.2 bu. of corn; 3.4 bu. of flax; 9.7 bu. of oats; 6.6 bu. of wheat, and 1.9 bu. of soybeans per acre.

Here, in Mr. Willoughby's words, is another example:

"Billy Barker, a farmer in Johnson County, uses lime in his rotation. A few years ago I was on his farm where sweet clover was growing. No lime—sweet clover was a failure, just a plant here and there. That fall the land was planted to wheat and the next year the wheat was a near failure on the no-lime soil while the wheat following limed sweet clover was estimated to produce 40 bu. per acre. Many a stand of alfalfa, sweet clover, and red clover are low yielding and a near failure because of a lack of adequate lime in the soil."

MEDFLY OBSERVER

SACRAMENTO—Robert W. Harper, chief, Bureau of Entomology, California Department of Agriculture, spent June 20 to June 27 in Florida surveying activities of the federal government and the state of Florida in controlling the Mediterranean fruit fly. Mr. Harper said California agricultural officials desired to keep informed regarding the progress and nature of the control program and to learn of any new methods or equipment used in the campaign.

What's Been Happening?

This column, a review of news reported in Croplife in recent weeks, is designed to keep retail dealers on the regional circulation plan up to date on industry happenings.

Facts and figures on fall fertilization—to help manufacturers, distributors and retailers boost autumn business—were presented in a special section of the July 23 issue of Croplife.

Congress was asked for a \$2.5 million appropriation to expand the campaign to control the Mediterranean fruit fly in Florida . . . The J. R. Simplot Co., Pocatello, Idaho, announced the opening of a new phosphate mine on the Idaho-Montana border a short distance west of Yellowstone Park.

A possible shortage of benzene because of the steel strike, threatened basic manufacturers of pesticidal materials that use this raw material. The steel industry's coke ovens supplied a large portion of the chemical trade's benzene needs.

R. W. Ludwick, State College, N.M., was elected president of the Association of Southern Feed and Fertilizer Control Officials at the group's 14th annual meeting at Roanoke. E. W. Constable, Raleigh, N.C., was made vice president and Bruce Poundstone, Lexington, Ky., was re-elected secretary-treasurer. M. P. Etheredge, State College, Miss., is retiring president.

An appropriation of \$45,000 for control of an infestation of grasshoppers in southern Iowa, was granted by the state, on July 9. The move was expected to be in time to bring the infestation under control before serious damage was done to corn and beans, in particular.

Experiments with 2,4-D against sagebrush on western ranges showed that the unwanted plant can be controlled with this chemical. As a result, USDA is recommending the use of 2,4-D for control of this unpalatable plant which covers millions of acres in the west.

The U.S. Bureau of Census reported that May production of anhydrous ammonia totaled 310,422 tons, a gain of 1% over the production of April. Output of ammonium nitrate, however, was down slightly in May as compared to the previous month.

Factors involved in making recommendations for fertilizers were studied in the 35th annual meeting of the Del-Mar-Va Peninsula Fertilizer Assn. held at Ocean City, Md., June 30. Some 125 fertilizer men were in attendance. Dr. H. L. Dunton, Virginia Polytechnic Institute, was featured on the program.

A three-day rain ending July 4 acted as a temporary deterrent to the destructive activities of hordes of grasshoppers in Iowa. Dr. H. M. Harris, state entomologist, however, said that broader control measures would have to be taken if the infestation were to be halted. The state legislature was asked for an emergency appropriation of \$45,000 to be used in grasshopper control.

A number of technical papers covering the general theme of increasing the efficiency of fertilizers, were presented at the seventh annual Regional Fertilizer Conference held at Yakima, Washington, June 28-30. Speakers included representatives of fertilizer manufacturing firms and state experiment stations in the Pacific Northwest.

West End Chemical Co. and Stauffer Chemical Co. announced that their respective boards of directors approved a plan of merger of West End into Stauffer. West End produces borax, soda ash, salt cake and lime at its Searles Lake, Cal. plant. Stauffer has long been exclusive sales agent for West End's borax.

Although consumption of fertilizers in the U.S. and territories showed a decrease of 0.22% during the fiscal year ending June 30, 1955, the total use of plant food nutrients set a new record, according to the annual fertilizer use report issued annually by the U.S. Department of Agriculture. Total tonnages of fertilizers amounted to 22,723,705 tons, 49,794 tons less than the previous period. Plant nutrients, however, amounted to 6,119,841 tons, which was 224,283 tons (3.80%) over that used in the previous year.

The Agricultural Ammonia Institute reported that sales of NH₃ in the January-to-May period showed an increase of 17.38%. This figure was based on reports from AAI members in 25 states and Canada. Reported sales totaled 30,471 tons for the five month period, as compared with 25,958 reported in the same period of last year.

The Texas Company announced that it would begin construction on a new 180-ton-a-day ammonia plant at Lockport, Ill., this fall. According to L. C. Kemp, Jr., general manager of the Texaco petrochemical department, production at the new facilities is expected to begin late in 1957.

The fertilizer industry in 1954 added \$234,000,000 to the U.S. volume of manufactured goods, according to the 1954 census of manufactures released by the U.S. Bureau of Census. This compares to the \$187 million which the industry added by manufacture in 1947, when the last census was made.

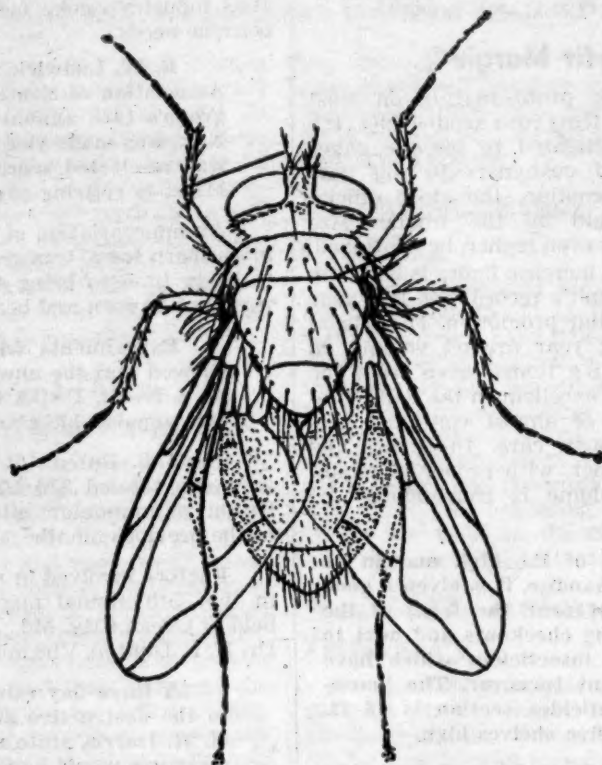
Some 30,000 acres in Colorado were sprayed for grasshopper control as a starter in a 212,000-acre total in Las Animas and Baca counties. It was also announced that there is a possibility of spraying another 10 or 12 thousand acres in Douglas county. Bids were let on June 22, for 300,000 acres in Lea, Union, Quay and Harding counties. Additional acres in Texas were also set for treatment against grasshopper infestations.

An increase of 16% in the output of organic agricultural chemicals was reported by the U.S. Department of Agriculture for 1955. A total of 484 million pounds of chemicals was produced in 1955 as compared to 419 million in 1954, the U.S. Tariff Commission reported.

The agricultural chemical industry expressed varied opinions on the effect the soil bank would have on plant food sales this season, with both pessimism and optimism being noted. The only favorable aspect of the soil bank, so far as the plant food industry is concerned, appeared to be in the corn belt. Production reduction of most crops will not be significant, which means that surpluses will not be reduced substantially.

BUG OF THE WEEK

Mr. Dealer Cut out this page for your bulletin board



Blow Fly

How to Identify

Blow flies, often called green bottle flies and blue bottle flies, are of many kinds. The "green bottle" fly is almost twice the size of the common housefly, and is a bluish-green color. Reflections of light give it a bronze appearance. The black blow fly is dark greenish color all over and is larger.

Habits of Blow Flies

Life cycles of blow flies are similar to that of the house fly. They breed mainly in the carcasses of dead animals and in meat in garbage. Although they are seldom so numerous as houseflies, they carry many of the same disease-producing organisms. The larvae of blow flies also develop in wounds or natural openings of the body. Some species, true parasites, develop in the tissues of living animals. The flies spend the winter in the larval or pupal stage in soil or in manure. After appearance in the early spring, the pests continue breeding throughout the summer unless this activity is checked by dry weather. A generation is completed in about 3 weeks, from egg to egg.

Damage Done by Blow Flies

These pests cause considerable losses to cattle, horses, hogs, sheep and goats. According to USDA figures, blow flies cause an estimated annual loss to these animals of more than \$15 million. Chickens, too, can be affected by the fly, though indirectly. At times, fowl become ill and die from ingesting blow fly maggots that have developed in contaminated meat. The blow fly is also suspected of being a carrier of a number of human disease organisms.

Control of Blow Fly

An obvious means of control of these flies lies in sanitation, or removal of situations conducive to egg-laying and protection from cold weather. A number of insecticidal chemicals are effective in control. DDT, lindane, methoxychlor, chlordane, toxaphene and dieldrin have all proved their effectiveness under different conditions. Fly resistance to some of these toxicants is a real problem, but by alternating use of different insecticides, much of this handicap may be averted.

Drawing of blow fly furnished Croplife through courtesy of U.S. Department of Agriculture.

Previous "Bug of the Week" features have been reprinted in attractive 24-page booklet, priced at 25¢ single copies; reduced rates in quantities. Write Croplife Reprint Dept., Box 67, Minneapolis 1, Minn.



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FARM SERVICE DATA

Extension Station Reports

A DDT spraying campaign has proved highly successful in holding down the damage to celery plants raised in California to an actual infestation of about 4%.

For three years a virus disease has plagued celery growers, stunting and wasting an estimated 30% of the annual \$2½ million crop. Thomas M. Aldrich, farm adviser, and Roger M. Drake, deputy agricultural commissioner, conducted a research program together with Julius H. Freitag, professor of entomology and parasitology at the University of California.

It was discovered that the six-spotted leaf hopper carried the disease, and that the leaf hoppers bred in natural grasses until they dried up, and then migrated to grasses along the creeks until the creeks dried up, and finally to the irrigated celery plants.

The spraying campaign was conducted along the creeks and irrigation ditches before the insects could get into the fields, and this was done by plane. Although at the start of the season the leaf hopper population was high, at harvest time it had been reduced to about a four per cent infection of the plants.

Spraying is being repeated this year for the second time, but with helicopter in the hope of gaining even better control.

★

Wyoming Agricultural Experiment Station has issued a circular, entitled "Weed Control in Wyoming 1956." Sections of the publication discuss cultivation, soil sterilants for perennial weeds, control of perennial noxious weeds, selective control of annual weeds in crops, weeds in pasture, meadow, and rangeland, aquatic weed control and summer fallow.

★

Copies of a 2-page mimeograph on the use of growth regulator sprays on Evergreen blackberry plants are now available at Oregon county agents' offices. The title is "Suggestions for the Use of Betanaphthox-acetic Acid and Para-chloro-phenoxy-acetic Acid Sprays on Evergreen Blackberry Plants." Authors are Dr. Quention B. Zielinski and Ralph Garren, Jr., members of the Oregon State College horticulture department.

Purpose of spraying with the two growth regulator materials is to increase size and yield of blackberry fruits. Experimental work with growth regulator solutions has been carried on by OSC research workers since 1950.

Sprays have been applied to thornless Evergreen blackberries grown under both irrigated and non-irrigated conditions. The scientists have some evidence that the sprays may not be effective in cases of low soil moisture.

Marion County, Ore. growers using growth regulators since 1953 have reported a noticeable increase in Evergreen blackberry size during the last two or three pickings. In most fields growth regulator solutions have had no noticeable effects on the first two pickings. Most growers report at least a 10% seasonal yield increase from the use of growth regulator solutions.

OSC experiment station workers will cannot make unqualified recommendations concerning the use of growth regulator materials on thornless evergreen blackberries. However, growers who have not used growth regulators can try out the materials on part of their fields. These tests will involve no undue risks but should indicate to the grower the results that

may be expected under his particular set of conditions.

Materials are being stocked by at least two Salem business firms. The recommendation is one pint of growth regulator solution in 100 gallons of water. About 200 gallons or more spray per acre is required to give good coverage in the average mature field of thornless Evergreen blackberries.

★

Field corn can be produced profitably in desert valley areas, provided sufficient fertilizer is applied at the proper time, and provided other approved cultural practices are employed.

The Riverside County Agricultural Extension Service, University of California, has recently published a report covering 1955-56 field crop production studies in the desert valleys of Riverside County.

Field corn studies were carried out on the Bruce Kratka Ranch, 2½ miles southwest of Ripley in the Blythe area. Ten varieties were tested in a trial replicated four times and randomized. Each treatment was four rows, 600 ft. long, 40 inches apart. The soil type was clay loam, Holtville series. All plantings were on Feb. 24, 1955, 2 inches deep into pre-irrigated beds.

An application of 300 lb. per acre of 16-20-0 fertilizer was broadcast prior to planting. 80 lb. of nitrogen derived from anhydrous ammonia were injected on March 26, and another 30 lb. of nitrogen from anhydrous ammonia injected per acre on April 20, for a total application per acre of 208 lb. actual nitrogen and 60 lb. actual P₂O₅.

The plots were irrigated ten times, first on April 2. They were harvested on Aug. 2. Top yield was from a yellow variety, 123.3 bu. of ear corn per acre. Second best yield was from a white strain, 120 bu. per acre. Third and fourth top yields were yellow varieties, 113.1 and 101.4 bu. per acre, respectively. The lowest yield from the ten varieties tested was 35.6 bu. per acre.

★

The Southeastern New Mexico Sub-Station of the A&M College System will have only 10 acres in cultivation this year, but it is the first of more than 100 acres that will someday be used for experimental plant, insect and soil purposes.

The station had a unique beginning. There was no station in this area where the Pecos River Valley has problems quite different from other river valleys. The farmers formed a land improvement association for the purpose of getting a station of their own. Each producer paid \$1 for every bale of cotton he grew, and this money was used to buy 160 acres of land.

Then they erected an implement shed, an office and small laboratory and a house for the farm foreman. Also they drilled an irrigation well and got 10 acres leveled in time for 1956 crops. Last year the extension service of New Mexico A&M College agreed to take charge of the station and to staff it.

Superintendent is W. S. McGuire, who is working on long range plans for the station.

"We have some serious problems in this valley," he said. "Alkalinity of the soil, insects and cultural practices all need attention. Within the next few years we hope to add a soil scientist, an entomologist and possibly others."

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Better Selling

Richer Sales Fields for Dealers



Doing Business With

Oscar & Pat



By AL. P. NELSON
Croplife Special Writer

Pat McGillicuddy sat at his heaped up desk, reading farm and other magazines, while his balding, rotund partner, Oscar Schoenfeld worked rapidly, and eagle eyed over a delinquent account collection list. Pat shifted his long form, straightened a little and said to Oscar:

"We are in the summer doldrums, Oscar, and we should do something about it."

"Huh," said Oscar looking over his glasses. "We should get out and collect money that farmers owe us. Ach, that would be a good idea."

This was a barb directed at Pat, for the latter as outside salesman and partner in the firm was supposed to do the collecting.

"Begorra, I'll get at that job one of these days," Pat said, "but first we should settle this idea of getting more business. Insecticides and sprayers are moving, Oscar, but fertilizer is dead. It is too late for spring selling and too early for fall selling."

"Then it is a good time to stop all advertising and all buying and sell some of the stuff we have on the shelves—for cash," Oscar said. "Let's get the money into the bank and not leave it in stock on the shelves until fall."

Pat shook his head. "No, Oscar, that isn't good business. You have to have a stock big and varied enough to handle a farmer's needs when he comes in or he will go elsewhere to buy, and then they may get him as a regular customer."

"Other stores can have a lot of our customers," Oscar growled, "especially those that don't pay their bills. We make no profit on them."

Pat thumbed through the magazines some more. Suddenly his blue eyes lighted. "Listen, Oscar, it says in this article that there is nothing the farmer appreciates more than friendliness. The writer says that if merchants would learn to shake hands with farmers when greeting them, they would make more friends and better customers."

"Ach, that is a waste of time," Oscar grunted. "Why not just say 'hello' or nod your head at them? They came here to buy something, not to have a fancy party with hand shaking."

Pat apparently paid no attention to this remark. He slammed the magazine down on the desk. "That is it!" he said. "Oscar, we will have a Friendliness Week, that's what. We will show the farmers we are the friendliest merchants in the county."

"How will that sell more fertilizers and insecticides?" Oscar asked practically. "You can't sell friendliness."

"For one week," Pat said, "we will all take turns in standing at the front door and shaking the hand of every person who comes in. One hour at a time for employees and us, Oscar. They aren't too busy. And it will make a big impression with the trade."

"Maybe we will have a table up front and give each customer a pencil. Farmers can always use a pencil. A shake of the hand and a pencil. That doesn't cost much."

"I will not stand up in front and waste time shaking hands," Oscar said icily. "I have my desk work to do, and I will get behind in my schedule. And I don't want to shake the hands of some of those customers—those, those stinkers that don't pay

their bills for weeks and months. Not me."

"Oscar, Oscar," reprimanded Pat, "a customer is never a stinker. The customer is always a king in any store he enters."

"King or not, they should pay their bills," Oscar grumbled. "Ach, forget this friendly week, Pat. It will just cost more money. Better get out and collect that money."

"I'll do that, too," Pat said enthusiastically, "when I am not at the door shaking hands. The friendly campaign will soften people up, so they'll feel more like paying their bills."

"I don't care if they are softened up or not," Oscar said coldly, "as long as they pay up. They bought, and they should pay."

Pat went on dreaming. "We will coach all the employees to be extra friendly that week, and maybe it will become a habit. They can smile more. They can listen better when farmers start to brag about this and that. They can let the farmer talk first and talk more. I have always heard it said that the world doesn't have enough good listeners."

"Ach," snorted Oscar disgustedly, "all this stuff you read in the magazines, it is a waste of time."

"No, it isn't," Pat said. "Some mighty smart college professors figure out all these things about how people act and why they respond as they do. Those of us in business can use their findings and make more money handling customers."

Oscar shook his head. "I don't believe it. If the college professors are so smart, why are they always forgetting things? If they can't remember what they think, ach, how can we?"

"They forget unimportant things

because they concentrate too much," Pat said. "Yeah, I have heard that joke, too, about the college professor who went into a washroom and then forgot why he went in there, but that is not true about all of them."

"Ach," Oscar said. "Why can't we come right out in our window displays and say on signs 'Good Fertilizer . . . For Cash' and then have a big sign in our display room 'Pay Your Bills Now and Start Out August Right?'"

Pat shook his head. "No, that would kill business, Oscar. That is not sales promoting. The idea is to get people in a happy, buying mood. Don't scare them by asking for money so much. Most people are able to pay; they have good credit ratings. The credit agencies say that a merchant collects within 30 days from 98% of his accounts as a rule."

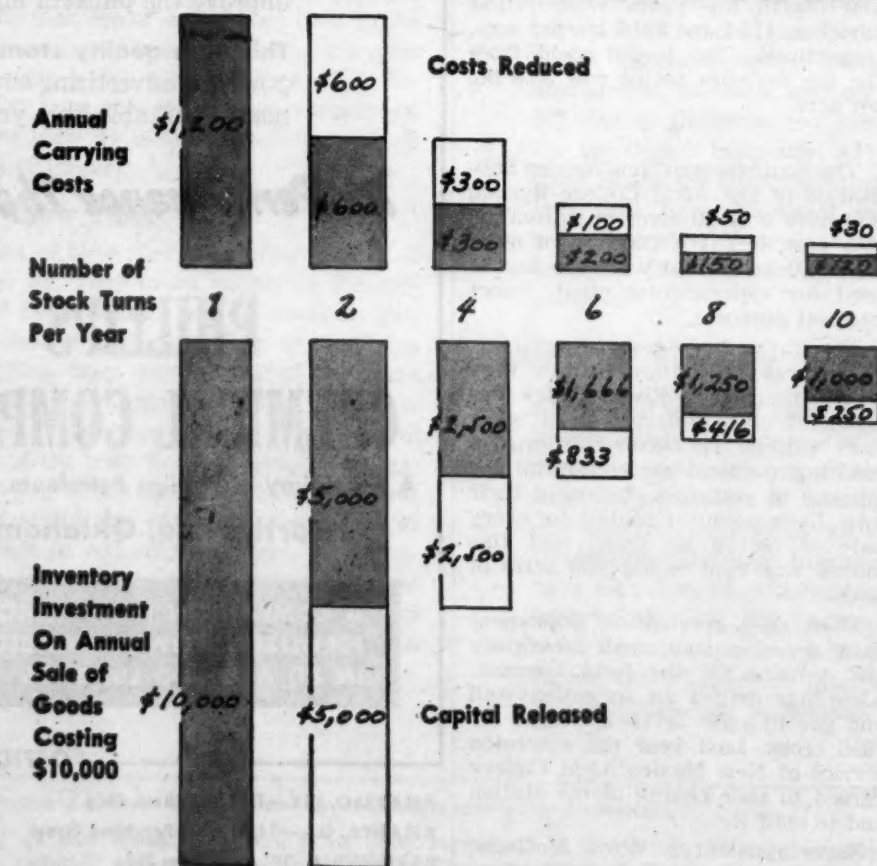
Oscar glared. "Take a look at that delinquent list on your desk," he snapped, "and you will soon see that stuff doesn't apply to us."

Pat got up from his desk. "Oscar," he said quietly, "I am going to take that delinquent list and start out to collect it—using the friendship idea. I am going to smile at every delinquent, shake his hand and be friendly, and see if it works. If it does and if I collect most of these accounts that way, I am going to start that Friendliness Week, and you are going to take your turn with the rest of us standing at the front door shaking hands with customers."

"I will not!" Oscar snapped.

"Either that," Pat said, "or you will have to pay a substitute his regular

Dealer's Slow Inventories Are a Burden



THE BURDEN of slow inventories is graphically illustrated in the above chart adapted from one used by Fred Trullinger, Portland Seed Co., Portland, Ore., in a retail training school talk at the Washington State Feed Assn. convention. The chart indicates that not only is capital tied up in inventory, but ever-mounting carrying costs eat into profit. Interest on the investment, cost of storage, handling and insurance, loss due to overstocks, market declines, breakage, etc., will amount to about 12% per year, according to Mr. Trullinger. Thus, average inventory eats up 1% of its value every month.

CROPLIFE, July 30, 1956

hourly wage for doing it. One for all and all for one, you know."

"I will not pay anybody to stand up there and shake hands for me," Oscar growled, as he went back to his desk. "Ach, if you collect all that money, and I have to stand up from I will put a card table up, and work on discounts. That will give customers the idea that we mean business, too, and they should pay up their accounts, even the 30 day ones."

Dry Fertilizer Sales in Idaho Normal This Year

POCATELLO, IDAHO—Dry fertilizer sales in Idaho have been about normal this year, according to Ben D. McCollum, sales manager of the J. R. Simplot Co., fertilizer division, at Pocatello.

Spring sales were a little ahead of 1956, with a steady increase in phosphoric acid fertilizers. There has also been an increase in the use of treble superphosphate, though the ordinary phosphates are still used widely in areas where the soils have a high calcium content.

Mr. McCollum says that sales in all the western states which the company serves have held up well in fertilizer usage, and are particularly strong in Oregon and Washington.

He gives an interesting comment on various reports that state the downward trend of fertilizers.

"I think sales are often higher than reported," he said, "because there are so many more dealers now and the competition for sales is keener. Maybe some stores are selling less, but the total sales are possibly higher in these areas than reported."

CORN BORER TREATMENT

AMES, IOWA — Almost 900,000 acres of corn in Iowa were treated for the corn borer in 1955, compared with 580,000 acres in 1954, according to Iowa State College.

NEW MEXICO DEALER

(Continued from page 9)

and may need to put on additional helpers in another year. He makes deliveries to farmers throughout the area and to a few across the state line in Texas. In addition to farm chemicals, the store carries a complete line of small irrigation equipment and hardware.

"Nowadays we try to handle a little of everything," he said. "A farmer rushes to town for three or four items and he wants to find them at just one place. He doesn't have time to drive to several different places, hunt parking room and waste time. In order to hold his business, we stock whatever he may need to keep farm operations going."

Another thing which Mr. Lawler believes in is collecting for merchandise sold. He does put out a little credit, as all dealers in this area must do, but he is pretty sure of the customer's willingness and ability to pay before the products leave the store.

In summing up the reason why the store has made steady but fast progress the last three or four years, Mr. Lawler said: "I guess it's because we saw an opportunity here and then tried to put out farm chemicals when they were needed."

"We try to treat customers right, stand back of the things we sell, and sort of hold open house to any group of farmers who want to sit around the store and visit. I may be awfully busy, but I never try to be abrupt with a visitor just to get to a cash customer. Those things can be handled tactfully and must be in a store of this kind."

TRADE WINDS

News That Charts Selling
Opportunities for Dealers

HEAVY HOPPER INFESTATION

Northern California Farmers Waging Battle Against Insects

SACRAMENTO—Throughout Northern California's fertile acres farmers and ranchers are waging their annual battle against insect pests.

The greatest immediate menaces are the striped army worms and grasshoppers with the striped alfalfa aphid as an ubiquitous threat.

The army worm has caused damage to crops in Glenn, Yolo and other northern California counties. The build up of these leaf eaters began early in June and became severe late in the month, feeding on alfalfa, clover, corn, sugar beets and rice. Parathion at six ounces per acre has given excellent control on alfalfa and some growers have used this chemical in corn with good results.

The entire state is fighting its worst grasshopper invasion in 15 years. Earle T. Gammon, state entomologist, said that with the hatch virtually complete grasshoppers have infested 1,318,000 acres of range and crop land. Mr. Gammon reported that about 300,000 acres have been treated with poison bran and spray of aldrin and petroleum.

An area 12 miles wide and two miles long was sprayed in Kern County to form a barrier between advancing grasshoppers and the fields where cotton is maturing.

Mr. Gammon predicted there is likely to be great damage next year because there have not been enough over-all control programs to halt a large hatch next spring.

This year's grasshopper infestation has been estimated to be six times as large as that of 1955 when damage by these insects was placed at \$1,390,000. No estimates of crop damage have been made this year.

In Sutter County 4,600 predator wasps have been released to aid lace-

wings, lady birds and other predatory insects in the fight against the spotted alfalfa aphid. Hopes for an alfalfa variety resistant to the pest were blasted when Ernest H. Stanford, agronomist at the University of California, Davis, reported that at least another three years will be required before plant breeders are ready to increase the seed stock of a new resistant variety.

Aerial applications of sulphur dust are being made to control the tomato mite in the growing sections of Sacramento County and in the Sacramento Delta area. In Solano County it has been found that lack of proper winter spraying resulted in a build up of Calico scale and European red mites on pears and prunes.

An infestation of Hall scale which attacks stone fruits and almonds is reported in Yolo County, resulting in extension for an additional year of the eradication program. The State Bureau of Entomology and the U.S. Department of Agriculture have attempted quarantine measures to prevent spread of the Hall scale insect.

Another Mexican Fruit Fly Found in California

SACRAMENTO—A third specimen of the Mexican fruit fly has been trapped in the San Ysidro area of San Diego County by California Department of Agriculture entomologists.

The specimen, found in native California holly, was the fourth taken since the pest was found on the California side of the International Boundary in 1955. The canyon area in which the pest was found has recently been treated with an insecticide by county and state entomologists.

The campaign against the fly on the Mexican side is conducted by the U.S. Department of Agriculture in cooperation with the Mexican government. Work on the California side is directed by the California Department of Agriculture assisted by the office of the San Diego Agricultural Commissioner and federal entomologists.

Farm Chemical Use Shows Steady Trend in Arizona

PHOENIX—The use of insecticides and fertilizers have just about held their own in Arizona during the last 12 months, according to Al Evans, sales director of the Capitol Seed and Feed Co. Mr. Evans has salesmen covering the entire state, and says their reports are that fertilizers have shown a slight decline because of water shortages and fewer acres being cultivated.

"Farmers are not making as much money as they did two or three years ago," Mr. Evans said. "The drought and lowered water table have caused them to concentrate on the more profitable crops. With less acres the total amount of fertilizer is down, though they still put about the same amount per acre."

Mr. Evans says that insecticides have been sold in larger volume because of the alfalfa aphid. This insect is now spread to practically every valley and isolated farm in the state, and farmers are spraying regularly. "Here in the Sun Valley around Phoenix they sprayed all winter," Mr. Evans said. "They must keep it up or out of the alfalfa business."

Oregon State to Test New Forage Crop Pest Control Chemical

CORVALLIS, ORE.—A new chemical for control of insect pests in forage crops is scheduled for test this summer by Oregon State College scientists to see if the treated livestock feed results in any harmful residues in meat, eggs or milk.

The possible boon to hay and pasture crop production needs only clearance with the U.S. Department of Agriculture and Food and Drug Administration as a safeguard of human health. It has already been shown that animals are not harmed by amounts of the chemical needed to control the pests, Oregon State College scientists say.

OSC was selected by Shell Chemical Corp., manufacturer of the product, for a \$35,250 research grant to complete tests before Jan. 1 for an FDA ruling on commercial distribution of the material.

The grant will be administered through the agricultural research foundation at the college, according to R. W. Henderson, assistant director of the OSC agricultural experiment station.

Varied dosages of the chemical will be used this summer in feed for about 50 head of dairy and beef cattle, hogs and sheep, and 50 laying hens and fryers. Milk and eggs will be tested each week for traces of the chemical.

Half of the meat animals will be slaughtered at the end of a 12-week feeding period and chemical tests made of tissue. The remaining animals, along with the dairy cows and poultry, will be tested for an additional four to six weeks on feed that is free of the insecticide to learn if possible residue deposits decrease.

OSC scientists heading the project are L. C. Terriere, agricultural chemist; George Arscott, poultry husbandman; David England, animal husbandman, and Roger Sprowls, dairy researcher.



OUTDOOR ADS—Northern California's fertilizer manufacturers are taking to outdoor advertising to promote their wares. These two pairs of billboards, back to back, are supported by Fontana's Fertilizers of Redwood City and the M and M Fertilizer Co. of neighboring San Mateo, and they face the Bayshore Highway.

Alfalfa Moves Up Columbia Basin Crop Ladder

EPHRATA, WASH.—As in previous years, dry beans again prove the most popular crop for Columbia Basin Project farmers in 1956, a land-use survey of the project has revealed.

The survey was made by the extension service of Adams, Franklin and Grant counties, the Soil Conservation Service, the Agricultural Marketing Service and the Bureau of Reclamation.

But there were indications in the survey that the Columbia Basin's most popular crop is waning in popularity. Farmers have planted 36,062 acres of beans this year compared to 39,184 acres in 1955.

Of 196,824 acres available for cropping in 1956, 170,841 were in crops at the time of the survey. Last year at survey time, 143,483 of 163,773 acres were in crops, but an

additional 6,000 acres were put under cultivation before the growing season ended.

Alfalfa showed the greatest jump in popularity in 1956, moving from fifth place and 14,400 acres in 1955, to second place and 34,000 acres this year.

A large acreage of clover and alfalfa was lost last year to freezing weather. Project farmers are replacing this acreage, and have in new crop plantings 19,996 acres of alfalfa, 988 acres of clover, 1,123 acres of pasture and 348 acres of grasses.

The biggest drop in popularity was shown by onions, which went from 1,234 acres last year to 436 this year.

Small grains showed a small reduction in acreage from 32,379 in 1955 to 31,285 in 1956. Wheat accounted for 22,000 acres in 1956 compared to 24,000 last year.

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Range Fertilization Boosts Forage Yields In California Tests

SAN FRANCISCO—Fertilization of range plots has increased acreage yield by as much as three times, according to three year experiments recently completed on grazing land in Glenn County in northern California.

In plots where no fertilizer was applied during the test period the yield per acre was 5,000 lb. of green forage. On an adjacent plot where applications of 100 lb. of nitrogen were made per acre, the yield increased to 15,000 lb.

The unfertilized land supported one steer to seven and a half acres; the fertilized land required only five acres to a steer one year after fertilization and two acres to a steer the same year it was fertilized.

Glen Eidman, farm adviser, conducted the fertilization trials.

Beetles Build Up In Idaho County

BLACKFOOT, IDAHO—Colorado potato beetles have built up to damaging numbers this summer in the Bingham County, Idaho potato area, according to Milton Weston, county agent. He is urging farmers to spray DDT on the vines at least twice this season to prevent serious injury.

Bingham County is one of the greatest potato raising counties in the country, and average yields have reached as high as 250 bushels per acre. A crop like this is too valuable for the owners to take chances with insects, Mr. Weston said.

New Mexico Tonnage

STATE COLLEGE, N.M.—Fertilizer sales in New Mexico during the April-June quarter totaled 9,255 tons, according to the state Feed and Fertilizer Control Office.

Specialty crops in the project are numerous, though they account for only a small portion of the total acreage. Asparagus, mint and melons are the most important of the specialties. Vegetable and grass seed is becoming increasingly important. Plantings of fruit give promise of things to come.

The number of units being farmed in 1956 is 2,645, an increase from 2,259 last year. One hundred and seventy one of this increase is accounted for in the four irrigation blocks which are receiving water for the first time this year. All of these blocks are on the testing year, and 13,360 acres of the 54,553 in the four blocks are under cultivation.

Five irrigation blocks are in their first development year this year, and farmers have put 28,675 acres into production of a total of 60,993.

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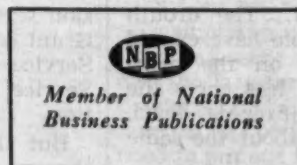
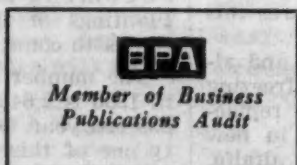
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Private Firm Adds Residue Test Service for Growers

A new aid to growers of agricultural products that may come under residue tolerances of the Miller Act has just been established in California by a private chemical company. This company, the Moyer Chemical Co., San Jose, Cal., has installed on its grounds a laboratory specializing in determining residues in crops at harvest time.

This new service to California growers enables them to obtain exact knowledge of where they stand in shipping produce or crops that may be subject to Miller Act violations. For example, the tolerance set for parathion on strawberries is one part per million and must be applied so as to leave a seven day period between application and harvest. If the residue is over this tolerance, the berries may be stopped in the markets, causing a severe loss to the grower.

If on the other hand, the test shows them to be have residues over the legal tolerance, the grower can do one of several things. He can wait another day, if conditions permit, and hope the residue drops, or he can pick the fruit for freezing. In picking for the freezer, the stem caps are removed and it has been found that the cap carries a great amount of the residue. In such cases a quick accurate test can mean the difference between profit or loss amounting to about 20,000 a carload.

The laboratory has a three-fold function. It will test for tolerance the crop of any farmer who might wish the service, test for themselves or other companies to correct recommendations on national products to local conditions, and to devise time charts for applications of the various chemicals used to control insects.

When not working on these tests,

SOIL BANK

(Continued from page 1)

Illinois counties USDA has estimated normal corn yields for land now in oats at 80 bu. per acre which in terms of dollars and cents means that a clipped acre of oats will return to the farmer in his corn valued soil bank certificate a payment of \$72 per acre.

Small wonder, trade sources say, that farmers in the Corn Belt are sacrificing their oat acreage to the extent they may be eligible to get the sure-thing 90¢ bu. corn payment.

USDA officials say that the corn account now estimated as of July 13 is approximately 1.9 million acres consists of a relatively small amount of corn land and by far the largest soil bank account entered under the corn program consists of oats, pasture and crops other than corn. Only in a few areas where the 1956 corn crop was clearly a big risk from here to harvest or already has withered has corn land been entered into the corn aspect of the bank.

Since USDA's report of the bank's operation only assembles bulk data through July 13—and since the deadline for signing up under the program was advanced to July 27—it must be seen that the outside estimate of oat clipping as large as two million acres is by no means an exaggeration.

These estimates are slowly being confirmed by actual field observations of USDA specialists who report during the second week of July they saw long lines of farmers outside county Agricultural Stabilization & Conservation offices waiting to sign up in the bank. For the state in which this observation was made an abnormal state-wide drought condition exists. It must be noted that the news of soil bank opportunities has spread like wildfire among the Corn Belt and Great Plains states and farmers are not overlooking the possibilities.

Dr. Joseph Deck, who does the testing for the company, and also heads the chemistry department of Santa Clara University, Santa Clara, Cal., devotes his time to field tests to obtain data on the time it takes various insecticides to "break down" in their effectiveness on insect kill.

This laboratory has already seen wide usage among growers in California. J. C. Bennett, manager and partner of the Moyer Chemical Co., states. Although the first of its kind in California, it has already tested residue tolerances for almost all sections of northern California. Deciduous fruits are the main crops that find the testing valuable; but vegetables, especially lettuce, and alfalfa hay where insecticides have been used to stop aphid or other insect infestations, have been calling on the services of the laboratory in increasing numbers.

1957 Soil Bank Certificate Values For Wheat Announced

WASHINGTON—True D. Morse, under secretary of agriculture, announces that soil bank certificates in the acreage reserve program for wheat will have a value of 60% of the wheat price support level or \$1.20 for the 1957 wheat crop. This is the same allowed for the 1956 crop but in the case of the 1956 crop the per unit payment per bushel represented total payment after the farmer had bought seed, fertilized and cultivated his land and then agreed not to harvest the crop.

The rate of soil bank certificate values for the 1957 crops has been a matter of controversy within the U.S. Department of Agriculture for several weeks. One school of thought held that it was necessary to make the soil bank certificate values high to encourage contributions of wheat, cotton, corn, peanuts, tobacco and rice land to the soil bank in 1957. Advocates of the liberal approach contended that the soil bank had to attain its goals within the next three years, otherwise it would fasten itself onto the farm program for an uncertain and possibly interminable period.

The law says the soil bank is effective for a period of four years—1956-59. It was not expected that it would be fully effective for the 1956 crops except for corn since the legislation was delayed in Congress by prolonged debate.

The purpose was to bring about a reduction in production of the basic commodities and also to effect cross-compliance with acreage allotments and soil bank goals on the non-basic, non-perishable crops in a three-year period. The three-year period has been estimated as the measure of time required to reduce the surpluses of those basic commodities to normal necessary levels. This purpose could not be attained, USDA officials contend, unless the soil bank certificates carry a large enough per unit value to stimulate the farm communities to cooperate in the immediate years ahead. It had to be a hard hitting tool at once and not a slow-approach instrument, it is claimed.

The announcement of \$1.20 bu. soil certificate value to the 1957 wheat crop indicates a victory for those who want to see the soil bank attain its immediate goals and then be discarded. The \$1.20 bu. wheat certificate value should accomplish effective action, USDA officials declare.

JOIN MCA

WASHINGTON—The Geigy Chemical Corp., New York, and the Missouri Coke and Chemical Division of Great Lakes Carbon Corporation, St. Louis, have been elected to membership in the Manufacturing Chemists' Assn.

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WORLD REPORT

By GEORGE E. SWARBRECK
Crolife Canadian and Overseas Editor

There are prospects of a superphosphate industry being established in Nyasaland. Geologists of the Anglo-American Rhodesian Mineral Exploration Co. have started trenching operations in the Natache Hill area, near Lake Chilwa, to investigate the extent of the phosphate deposits.

One expert asserts that the deposits, first located about two years ago, contain about three million tons of rock of 60% content. The ore body stretches 100 ft. wide and inclines from the surface to a depth of 300 ft. Possibilities are that the quarrying method will be used to recover the rock.

The Rhodesian company engaged in the present investigation is associated with South Africa's Anglo-American Corp., a major participant in the mining business of the African continent. The company has been given exclusive prospecting rights over an area of 3.6 sq. mi.

Whether or not a superphosphate industry can be established in Nyasaland depends upon the possibility of producing the fertilizer on the site at a price comparable with the product now being imported. This, in turn, is dependent upon the availability of cheap and sufficient power. Officials say that power for a fertilizer factory can be provided by the erection of a hydroelectric barrage on the Shire River at nearby Matope.

Chilean Nitrate

The Chilean Congress has now approved the nitrate referendum in the form agreed upon between the government and the nitrate companies a year ago.

The way is now open for major developments in the lagging Chilean nitrate industry. Having faced heavy competition from synthetics in recent years, the producers called for government cooperation in regaining their place in world trade.

The government's share of the nitrate companies' profits has been upped from 25% to 40%. The nitrate companies will be allowed to convert their foreign exchange to meet production costs in Chile at the normal free rate prevailing at the time. The agreement also contains provision for certain amortization concessions to the nitrate companies.

The Anglo-Lautaro Nitrate Co. has undertaken, subject to loans being granted by the Eximbank, to invest approximately \$25 million in developments in Chile during the next five years. The other main nitrate producing company, the Chilean-owned Tarapaca y Antofagasta Nitrate Co., proposes to invest 11 million dollars.

New Indian Plant

Fertilizers & Chemicals, Ltd., Trumancore, India, has signed a contract with Chemiebau Dr.A.Zieren G.m.b.h. for the construction of a new sulfuric acid plant. The company already has two production units and, it is claimed, the addition of the third will make it the largest sulfuric acid producer in India.

The acid will be used for increasing the production of ammonium sulfate. Eventually, some of the output will be used in a new ammonium phosphate plant, part of the company's current major development schemes.

Australian Visitor

Some sidelights on developments in Australia and some comparisons with American practices have been made by Pat Bell, sales manager of Australia's Imperial Chemical Industries. Mr. Bell has made a month's tour of U.S. agricultural areas. He was a guest of the Stauffer Chemical Co. at a number of the company's agricultural chemical plants and laboratories during his stay. He says that he was

particularly impressed with Stauffer's new fungicide Captan and the soil sterilant, Vapam.

The airplane is gaining favor "down under" as an agricultural implement, Mr. Bell related. Right now, for example, attempts are being made to kill scrub trees by aerial spraying of 2,4,5-T. This is developing into a fairly common practice in those sections where farmers and ranchers would like to seed grass in what are now heavily wooded areas.

Wild Oats Control

Representatives of firms manufacturing weed control chemicals received on July 13, a first hand view of what their preparations will do toward the control of wild oats.

The group was taken on a tour of the wild oat control test plots of the University of Manitoba, by Dr. George Friesen, associate professor in charge of weed research. Results from the use of various chemical preparations ranged from plots where application of herbicides had shown little effect on the stand of unwanted vegetation, to some areas where all vegetation had been killed.

Experimental study of the effect of various chemical compounds on wild oat seeds in the soil has not been completed, Dr. Friesen told the group, but explained that study of this aspect of wild oat control is underway and will be continued.

Tests are also being made in other parts of the province and when data is available from all such plots, detailed information of results will be compiled, it was explained.

Briefs

During the first 10 months of the fertilizer year 1955-56, French production of nitrogenous fertilizers totaled 345,000 tons of nitrogen, compared with 305,210 tons during the same period a year ago.

A report from Oslo says that promising deposits of pyrites have been discovered in the Nordli district of North Trondelag, Norway. The deposits are now being investigated by geologists.

Millions of acres of phosphate-deficient soils in Western Australia would never have produced good wheat crops and heavy pasture without superphosphate, says a farm report. The manufacture of superphosphate started in Western Australia in 1910 and in that season sales totaled 27,000 tons. In the 1955-56 season usage has been estimated at 490,000 tons.

Plans are being finalized for the mining and utilization of lignite in Neyvelli, South India. Indian experts say the deposits total at least 2,000 million tons over an area of 100 sq. mi. Gas thrown off during the process of carbonization of lignite is used to produce ammonium sulfate with the help of gypsum or sulfur. Gypsum deposits are available in the vicinity or can be easily imported. A plant for the production of about 200,000 tons of fertilizer a year has been included in the Neyvelli project.



TRAINLOAD OF PLANT FOOD—Agricultural and business leaders acted as a reception committee in Kansas City recently when an 80-car train bearing more than 3,000 tons of fertilizer arrived from Olin Mathieson plant at Houston, Texas. This amount of the product "Ammono-Phos" was declared to be sufficient to add a million dollars to the Kansas wheat crop. Shown in the photo, beside one of the heavily-laden cars, are J. W. Scott, Kansas City, vice president-traffic of the Kansas City Southern Railway Co.; Joseph Mullen, Jr., Little Rock, Ark., general manager of the plant food division of Olin Mathieson Chemical Corp., and Vernon Jameson, St. Louis, area executive of Olin Mathieson.

Gloomicides

Lonely baby chick taking a look around the electric incubator full of unhatched eggs:

"Well, it looks as if I'll be an only child. Mother has blown a fuse."

★

A first-grader came home from school one day and announced excitedly, "They've got a magic record player at our school!"

"A magic record player?" asked his mother, puzzled.

"Yes," explained the boy. "You don't have to plug it into electricity. You don't even need electricity to make it play. All you do is wind up a crank!"

★

To the Friends Hostel at Jordans, England, came very late one night a young couple asking for accommodations. The caretaker first reproved them for disturbing the repose of her household. Then, remembering her responsibility for Quaker hospitality, she asked, "Are you friends?" To which the man replied reassuringly, "Oh, no, we're married."

★

The young lady, having recently acquired an interest in botany, asked of a Southern gentleman, "What sort of plant is the Virginia creeper?"

"It is not a plant," he replied sadly. "It's a railroad."

★

The lion awoke one morning feeling uncommonly well. He stalked down the jungle trail until he came to a hyena. "Can you tell me," he asked, "who is King of the Jungle?" The hyena bowed. "Sire," he said, "you are the king."

Then the lion came to a leopard and repeated his question. The leopard, too, gave assurance that the lion was King of the Jungle.

Finally, the lion came to an elephant, standing in the shade of a tree. Again he asked, "Who is King of the Jungle?" Without replying, the elephant picked up the lion and threw him against the tree trunk. Then, before the lion could catch his breath, the elephant picked him up and threw him again. This time the lion wriggled around behind the tree and shouted, "All right, all right—you don't have to get so mad, just because you don't know the answer!"

Safety School For Supervisors Scheduled Aug. 16-17

RICHMOND, VA.—A safety training school for fertilizer plant supervisors will be held at Cape Fear Hotel, Wilmington, N.C., Aug. 16-17, according to an announcement by Curtis A. Cox, Virginia-Carolina Chemical Corp., general chairman, Fertilizer Section, National Safety Council.

The school has been planned under the guidance of W. C. Creel, chief safety inspector of the North Carolina Department of Labor and chairman of the supervisory training program committee of the Fertilizer Section.

"It will be our purpose to give those attending material and training which will be most useful in accident prevention work in their respective plants," Mr. Cox said.

"The material to be used has been carefully screened in order that a 'down-to-earth' approach might be given to the matter of safety. Records indicate that much good is now being done in the fertilizer industry safety-wise; however, we know that there is much still to be done and through a training program such as this, it is our belief that further reductions in accident losses can be made."

In order to secure funds to cover the necessary expenses a registration fee of \$5 per person is being charged.

Pacific Northwest Group To Meet in Canada

PORTLAND—The seventh annual convention of the Pacific Northwest Plant Food Assn. will be held at Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia Nov. 7-9. Reservations should be made directly with the hotel, according to Leon S. Jackson, association secretary.

Main sessions of the convention will be held Nov. 8 and 9, with the banquet scheduled for the evening of Nov. 9.

MORE LETTUCE ACREAGE

ALAMOSA, COL. — A marked increase in lettuce plantings is foreseen in the San Luis Valley, following erection of a vacuum processing plant for the vegetable. It has been estimated that acreage this year is up as much as 20% over that of last year.

Cooperation Makes Colorado Insect Program Work

FORT COLLINS, COLO.—The reason for an effective insect control program in Colorado is the cooperation between farmers, professional people and the chemical companies. This was brought out in an interview given by Dr. L. B. Daniels, head of the entomology department at Colorado A&M College.

Dr. Daniels heads a group that meets at the college annually to map out plans for the coming season's battle against insects. In this group are county agricultural agents, teachers, farmers, entomologists and representatives from the insecticide manufacturers.

"Insect control must be on a coordinated basis," said Dr. Daniels, "and by all working together, we are being of some help to our farmers and fruit growers."

One way the system works is in being able to anticipate insect build-ups in various parts of the state, then instructing growers what should be done. Quite often they can predict the appearance of an infestation and determine in which way it might travel.

This is done by catching insects in light traps throughout the state and then sending them to the college laboratory for identification. Often the laboratory will receive thousands of insects in a year, says Dr. Daniels.

Once an insect makes its appearance, then the communication system is put into high gear. By use of radio, TV and the newspapers, farmers are told when to expect the insects and what kind of insecticide should be used. Also the county agents visit their local farmers and set up methods of control.

"All this has helped tremendously," said Dr. Daniels. "We don't have exact figures on how much a control program pays the farmer, but we do have a pretty close estimate on the savings to an orchard owner. It amounts to about \$80 an acre."

There is still one group of people which the program has not reached. This is the small suburban farmer or gardener, who often is careless in keeping down insects.

"These neglected spots often serve as a breeding place for insects," he said, "and from there they spread to surrounding fields. Then another infestation is on its way."

Dr. Daniels thinks man's battle with insects will likely continue for a long time. And with farmers growing tenderer and tastier plants, the bugs may even increase. He says in some cases insects have built up a certain immunity to poisons and newer remedies must be concocted.

"The farmer should begin to think of a complete chemical program with his farming operations and follow it just as religiously as he does his seeding and cultivating," said Dr. Daniels.

Hercules Sales Gain In First Six Months

WILMINGTON, DEL.—Hercules Powder Co. reported for the six months ended June 30, 1956, net income equal after payment of preferred dividends to \$1.13 a share of common stock. Net income in the first six months of 1955 was equal to \$1.13 a share of common stock.

For the second quarter of 1956, net income was equal after payment of preferred dividends to \$0.63 a share of common stock. This compares with net income in the second quarter of 1955 equal to \$0.62 a share. Net sales and operating revenues for the six months' period were \$120,433,778 compared with \$112,562,077 for the corresponding 1955 period.

Industry Donations To University of California Listed

BERKELEY, CAL.—The University of California has been the beneficiary within recent weeks of cash donations amounting to more than \$22,000 principally by agricultural chemical manufacturers for the purpose of supporting some 13 separate research studies in the fields of entomology, insecticides, and fertilizers or soil amendments.

In addition, many other companies have also given quantities of chemical products themselves to be used in these and other studies, the total values of which cannot be estimated.

The largest single donation of \$4,000 was made during April by the Beet Sugar Development Foundation for a research project on nematode-plant relationships on sugar beets. The Veliscol Corp. made three separate cash donations during April: one for \$2,000 to support a soil insecticides program; a second for \$500 for research on the toxicity to insects of chlordane and Heptachlor and related chemicals; and a third of \$500 for studies on the control of cotton, forage crop, and other agricultural pest problems. Veliscol also gave 200 lb. of Heptachlor for the soil research program.

During May the Stauffer Chemical Co. made a gift of \$2,500 to study

the utility of ferric sulfate and compound T-867 as soil amendments. Southern Land made a \$2,000 grant for support of research in forest entomology; and the American Potash Institute, Inc., presented another \$2,000 for research on soils and plant nutrition.

Fifteen hundred dollars was allocated in May by the Upjohn Co. for research on insecticidal properties of selected organic compounds, and another \$2,000 was given by the Organic Chemicals Division of the Monsanto Chemical Co. for research on insecticidal action of chemical compounds.

Monsanto also gave another \$3,000 for basic research on the mode of action of insecticides, and American Cyanamid Co. made two grants. The first, for \$3,000, is allocated to continue research on insecticides and fungicides; and the second for \$350

to study use of calcium cyanamid for fertilization of Bermuda turf in floriculture and ornamental horticulture.

The 13th gift was made by the Hershel California Fruits Products Co., Inc., in the amount of \$375 for a study of the effect of nitrogen fertilizers on the quality of processed fruits.

In addition to these cash gifts, some 35 or 40 other grants consisting of various chemicals, both insecticides and fertilizers, were also given.

KENTUCKY FIELD DAY

PRINCETON, KY.—The departments of agronomy and horticulture of the Kentucky Agricultural Experiment Station will hold a joint field day at the experiment substation here Aug. 3.



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A symposium — published jointly by the American Society of Agronomy and the National Fertilizer Association.

A comprehensive study of nutrient-deficiency symptoms in crops compiled by 19 of the leading authorities in the field. It is being widely used by college professors, research and extension specialists, industrial chemists and agronomists, county agents, and teachers of vocational agriculture. Many farmers have found it of particular value in planning their fertilizer programs. Cloth bound, 390 pages, 242 illustrations, including 124 in full color.... **\$4.50**

USING COMMERCIAL FERTILIZER (1952)

Malcolm H. McVickar

Dr. McVickar is chief agronomist of the National Fertilizer Assn. The book deals specifically with commercial fertilizer, how it is produced and how to use it. It is non-technical. It includes chapters on how to measure fertility of soils, secondary and trace-element plant foods. 208 pages, 106 illustrations, cloth bound **\$3.00**

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Published jointly by the American Society for Horticultural Science and the National Fertilizer Association.

An entirely new, one-of-a-kind book. It is designed to acquaint readers with nutritional deficiency symptoms or "hunger signs" of common yard and garden plants including lawn grasses, shrubs, flowers, garden vegetables, and cane and tree fruits. It stresses plant feeding, or "what makes plants grow." Sixteen of the nation's leading horticultural authorities collaborated in its preparation. Cloth bound, 300 pages of text and illustrations including 37 pages in full color **\$3.00**

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Gilbeart H. Collings

Based upon the author's practical experience as an experiment station agronomist and teacher, and incorporating information on recent developments by agronomists, chemists, engineers and fertilizer manufacturers. Authoritative on problems concerning commercial fertilizers and their use in gaining larger yields. 160 illustrations, 522 pages... **\$8.00**

PLANT REGULATORS IN AGRICULTURE

Dr. Harold B. Tukey

Published September, 1954. A textbook giving background material for county agents, farmers, citrus growers, nurserymen, gardeners; providing fundamentals and general principles; covers encouragement of roots by plant regulators, control of flowering and fruit setting, parthenocarp, abscission, prevention of preharvest fruit drop, delaying foliage and blossoming, maturing and ripening, inhibition of sprouting and weed control. Brings together specialized knowledge of 17 authorities in the field, with two chapters written by Dr. Tukey, head of department of horticulture at Michigan State College. 269 pages **\$5.50**

PHOSPHATES IN AGRICULTURE

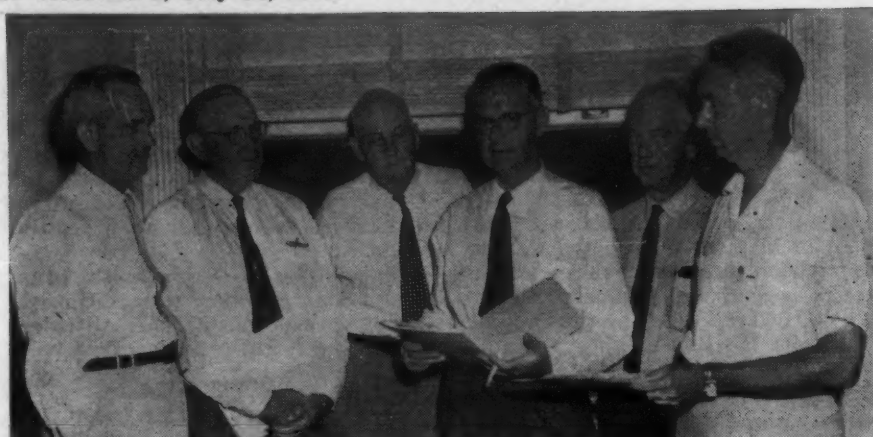
Dr. Vincent Sauchelli

A valuable book for the fertilizer salesman, agricultural teacher, farmer, fertilizer agent and county agent. Deals with rock phosphate versus superphosphate and colloidal phosphate, with the origin of phosphorus, the mining and processing of the phosphate rock, granulation of superphosphates, fixation of phosphates in the soil, losses of phosphorus and replenishments, phosphorus in nutrition, radioactive phosphorus, basic slag, fused and sintered phosphates and TVA research data on phosphates from field tests in 13 states. 176 pages and well illustrated **\$2.75**

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AT GEORGIA CONFERENCE—Ralph Johnson, University of Georgia agronomist, above, discusses fertilizer recommendations. Shown left to right, are L. W. Eberhardt, Jr., Georgia Agricultural Extension Service; J. E. Nunnally, president, Georgia Plant Food Educational Society; George H. King, director, Georgia Experiment Stations; Mr. Johnson; Malcolm Rowe, director, northeast district, Georgia Plant Food Educational Society, and Dr. J. Fielding Reed, secretary-treasurer of the society. Right, Jim Bergeaux, University of Georgia entomologist, points out fertilizer recommendations.

GEORGIA MEETING

(Continued from page 1)

Bergeaux and J. R. Johnson, extension agronomists.

George H. King, director of the College of Agriculture experiment stations, talked at each meeting on "Fertilizer Potential Created by Research." Paul Jolley, chief of the fertilizer division of the State Department of Agriculture, spoke on "A New System of Grade Reporting in Georgia."

Open forums featuring questions and answers from the floor climaxed each meeting. L. W. Eberhardt, Jr., associate director of the extension service, presided over the forums.

During the session on "Progress in Fertilizer Recommendations" the panel brought out significant facts about changes in fertilizer recommendations and uses on corn, cotton and pastures.

"The practice around 1900 was to use little or no fertilizer on corn," Mr. Wehnt pointed out in his talk. "In recent years emphasis has been placed on using rates of fertilization that will produce the highest net dollar return."

In his summary on corn fertilization Mr. Wehnt said, "Corn is grown on approximately one third (2,640,000 acres) of the cropland in Georgia. The general recommendation for corn is 500 lb. of a 4-12-12 fertilizer at planting and 80 lb. of nitrogen side dressing per acre."

"If all the corn acreage were fertilized according to this basic recommendation, fertilizer usage in the state would be increased over the 1955 estimated consumption by approximately 79,200 tons N, 30,000 tons P₂O₅ and 30,000 tons K₂O. These figures imply that a potential market exists in the state for the equivalent of 250,000 tons of 4-12-12 fertilizer and 69,200 tons of nitrogen side dressing for corn alone."

"The corn crop in Georgia presents a challenge and an opportunity—a challenge to bridge the gap between current plant-food utilization and modern fertilizer and lime know-how and an opportunity for all interested groups to join forces in showing that plant food, used properly, can greatly increase the net profit obtained from the large acreage of corn grown in Georgia. If this challenge is jointly met and this opportunity taken, agriculture in the state of Georgia will be greatly benefited."

Mr. Bergeaux said in his summary of cotton fertilization that "according to a county agent survey in 1955, Georgia farmers used 192,000 tons of a 4-11-11 fertilizer on 890,000 acres of cotton and side dressed with 11,000 tons of nitrogen. This was an average of 433 lb. of 4-11-11 and 147 lb. of a 17% nitrogen per acre (34 lb. N, 52 lb. P₂O₅ and 52 lb. K₂O). An average

of 380 lb. of lint cotton per acre was produced.

"Had the 1956 fertilizer recommendations been carried out, 97,000 more tons of 4-12-12 fertilizer would have been used and 11,000 more tons nitrogen, which is equivalent to about 65,000 tons of nitrate of soda or 33,000 tons of ammonium nitrate. If farmers had fertilized according to these recommendations and carried out a good insect control program, they could have averaged 500 lb. of lint cotton per acre, as proved by experiment station results, instead of the 380 lb. state average."

"Deducting the extra fertilizer and insecticide cost, this increase would mean \$22,250,000 more income for the cotton farmers of Georgia. This is a tremendous challenge to the fertilizer manufacturers and dealers. For by helping to get the farmers to use the recommended rates of fertilization, they will be increasing their business and profits as well as helping raise the income of Georgia cotton farmers."

Mr. King stressed in his talk on "Fertilizer Potential Created by Research" the expected increase in the use of fertilizer in the future to increase yields per acre.

"During the past 15 years Georgia farmers have increased production per acre by 30% through better fertilization and insect control," Mr. King pointed out. "In 1910 southern farmers used three million tons of fertilizer; in 1940 five million tons and they now use 10 million tons. There is no reason why the use of fertilizer should not double in the next 15 years."

International Paper Reorganizes Division

NEW YORK—A reorganization of the sales department of International Paper Co.'s Bagpak division which divides the country into four sales regions, has been announced by A. A. Scholl, division manager.

Regional sales managers have been appointed who will report directly to R. R. Worthington. Mr. Worthington will continue as divisional sales manager in New York.

Lee Turner has been named eastern regional sales manager with headquarters in Baltimore; E. C. Miller was appointed midwestern regional sales manager with headquarters in Chicago; H. Currie was named southern regional sales manager with headquarters in New Orleans; and R. A. Gair was promoted to western regional sales manager with headquarters in Denver.

Mid-South Farmers Alerted for New Boll Weevil Migration

MEMPHIS—Scattered showers brought relief to crops in the Mid-South, but the threat of increasing infestation of boll weevils darkened the farm picture.

Extension officials in Arkansas, Mississippi, Missouri and Tennessee in their weekly crops survey reported the showers improved crop conditions generally. In some areas, however, corn, pastures and vegetables have been hurt by the hot, dry weather.

Storms damaged crops in West Tennessee for the second time this summer.

Mississippi extension officials reported that cotton is in good condition, except in the dry areas of the state. In these areas, cotton is blooming on the top and beginning to cut out.

In many parts of Mississippi boll weevils and boll worms are under control. Farmers in Central Mississippi were told to be alert for a new migration of weevils last week.

In Southeast Missouri, an extended dry period has caused damage to sandy soil crops. Beans and corn have been badly damaged, said W. F. James, Pemiscot County agent at Caruthersville. Cotton has suffered slightly, but the bolls are good for this time of the year. Cotton is about 10 days ahead of schedule because of an earlier planting season this year.

Hot weather in Arkansas was beginning to retard crops in some areas, especially corn, vegetables, hay and pastures, the Extension Service reported.

The hot weather, however, was a boon to cotton, which thrives in warm temperatures. Early cotton was reported putting on bolls and plants in most areas were of good size.

Some farmers in southern Crittenden County, Ark. have reported enough damage from cotton insects to justify poisoning, Daniel Gruchy, associate county agent, said.

In checking several fields Mr. Gruchy found some rather large grubs which should be ready to emerge within a few days and farmers are standing by with insecticides until the weevils begin to come out of the squares.

Spider mite trouble has been noted in some areas of the county, causing some farmers to spot poison. Bollworm trouble seems to be on the decrease.

J. H. Newton, Colorado A&M Entomologist, Dies

PAONIA, COLO.—A stroke was responsible for the death recently of J. H. Newton, 63, Paonia, associate entomologist for the Colorado A&M Experiment Station who had been a staff member with the college for nearly 40 years.

A native of Axtell, Kansas, Mr. Newton was a graduate of Colorado A&M. He was appointed deputy state entomologist for the college in 1917. During his entire career he was stationed on Colorado's western slope where he worked primarily with fruit growers. He was appointed assistant entomologist for the A&M Experiment Station in 1933, and in 1946, associate entomologist.

Mr. Newton's many years of experimental work and regulatory duties included research on fruit insects in western Colorado with special emphasis on alfalfa weevil and codling moth control. He was author of 10 bulletins and circulars and numerous scientific articles.

HEADS EDITORS GROUP

UNIVERSITY PARK, PA.—Samuel H. Reck, Jr., extension specialist in agricultural information of Rutgers University, has been elected president of the American Association of Agricultural College Editors.

VIRGINIA-CAROLINA

(Continued from page 1)

executive vice president of Chase Manhattan Bank, New York City.

The six new members named to the V-C board are: J. Chadbourne Bolles, Charlotte, N.C.; John S. Battle, Charlottesville, Va.; Alexander J. V. Thelen, Charlottesville, Va.; Stanton W. Frederick, Seattle, Wash.; and M. Stuart Roesler, New York. The newly-appointed acting president, William C. Franklin, will also serve on the board.

At press time, no announcement had been made as to the future role of Joseph A. Howell in the affairs of V-C. Company spokesmen said that his situation is complicated by Mr. Howell's ten-year employment contract which does not expire until 1963.

John S. Battle, new board member and former governor of Virginia, as spokesman for the new management, commented last week that "selection of a new president will be done with reasonable promptness—in the next few weeks, we hope."

Regarding the status of V-C employees, Mr. Battle had this to say: "The new management has no idea of terminating the services of loyal employees. Any employee doing his job well, will be recognized as such."

Addressing the members of the reconstituted board of the corporation, Mr. Howell pointed up some of the complications involved in his removal from office and pledged his availability for assignment to further duties. "I have been advised that there is a legal inconsistency between my serving as president of the corporation and not being a member of the board," he said. "I understand that it is the intention of the newly elected members of the board of directors to resolve this inconsistency by the selection of my successor. Accordingly, I hereby serve notice upon you that the responsibilities of the office of president of the corporation now rest with you and such person as you shall select to fill this office."

"As you further know, I have contracted my services for a period of years. I hereby officially advise you that I am available for such assignment of duties as may be your pleasure. I would appreciate your specifying in detail as soon as possible the duties you wish to assign to me."

The final showdown of stockholders' votes on July 18 culminated a fight beginning months ago and increasing in intensity up to the day of the special meeting of stockholders. Both the V-C management and the insurgent group within the company's board of directors had made numerous statements and counter-statements for the information of stockholders during the past several months.

Monsanto Announces Freight Equalization

ST. LOUIS—Equalization of freight on ammonium nitrate, effective July 1, with Hopewell, Va., Sheffield, Ala., and Savannah (Fort Wentworth) Ga., was announced here July 23 by Monsanto Chemical Co.'s inorganic sales department. This applies on material shipped from Monsanto plants at Luling, La., and El Dorado, Ark.

FIELD DAY

MORGANTOWN, W. VA.—Plans for the 1956 Ohio Valley experimental substation agronomy field day, scheduled Aug. 9, have been completed. Dr. G. Gordon Pohlman, agronomist of the WVU Agricultural Experiment Station, has announced. Fifteen experiments, dealing with varieties, fertilization, weed control, seedbed preparation and crop rotations, will be featured.

Industry

2,754,188. Herbiol patent issued July 10, 1956, to L. Yowell, Westfield, N.J., and L. McKay, Cranford, N.J., for a herbicidal composition. The active ingredient is a phytotoxic concentration product of a 1,4-dichlorophenoxy-5-trichlorophenoxy mixture of oxy compounds produced by the reaction of the Oxo and CO, and an olefin having 5 carbon atoms in the carbonyl group. The product is a carbonyl compound which is subsequently converted to the alcohol product by removing the major portion of the alcohol component, leaving behind a product.

2,754,190. Process for the production of phosphate fertilizer. Patent issued July 10, 1956, to Edwin R. Field, N.J., assignor to the American Cyanamid and Engineering Corp. The process involves preparing superphosphate rock with phosphoric acid, the improved process involves mixing a certain amount of an aromatic oil boiling in the range of 100° to 150° F. with a concentrated sulfuric acid solution to produce a dilute sulfuric acid solution. The dilute sulfuric acid solution is then added to the superphosphate rock, being present at a sufficient level to inhibit the formation of perphosphate.

2,754,191. Defluorination of phosphate rock. Patent issued July 10, 1956, to Clinton Lakeland, Fla., and Catasauqua, Pa., assignors to Douglas Co., Inc. The method of defluorination is a natural process which comprises the phosphoric material containing charge in a furnace expressed by the formula (mols) CaO + N₂ = (mols) Ca₃(PO₄)₂ + 2CO₂.

does not exceed 1 mole of the charge. The charge is silica and calcined granules at a temperature of 2500° F. in the vapor and without the coating, after readily removable phatic material more than about 2,754,229. Material Rodent repellent. Patent issued July 10, 1956, to H. Fredenburg, H. E. Bissinger, and J. E. Bissinger, assignors to Columbian Chemical Co. The material is a repellent for rodents and is a pentachlorophenol derivative.

2,754,242. Process for utilizing waste material. Patent issued July 10, 1956, to Kosolapoff, Auburn, Mo. The process involves the use of waste material which contains a phenyl phosphine group containing bon atoms.

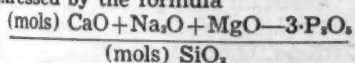
2,755,176. Plant growth regulator. Patent issued July 10, 1956, to Thomas J. Pearson, Everett N. Moore, and J. N. Moore, assignors to Monsanto Chemical Co. The invention is a continuous process for the manufacture of mixtures of plant growth regulators.

Industry Patents and Trademarks

2,754,188. Herbicidal Composition. Patent issued July 10, 1956, to Howard L. Yowell, Westfield, and John F. McKay, Cranford, N.J., assignors to Esso Research and Engineering Co. A herbicidal composition containing a phytotoxic concentration of the reaction product of a halogenated acid selected from the group consisting of 2,4-dichlorophenoxyacetic acid and 2,4,5-trichlorophenoxyacetic acid and the mixture of oxygenated organic compounds produced as still bottoms product of the Oxo reactions wherein H_2 , CO, and an olefin having from 6 to 15 carbon atoms is contacted at under carbonylation reaction conditions, elevated temperatures and pressures in the presence of a carbonylation catalyst to produce an aldehyde product which is subsequently hydrogenated to the alcohol product and thereafter removing the major portion of the C₆ to C₁₀ alcohol component by distillation, leaving behind said still bottoms product.

2,754,190. Process for Making Phosphate Fertilizer Admixed with a Sulfonated Oil. Patent issued July 10, 1956, to Edwin R. Littmann, Westfield, N.J., assignor to Esso Research and Engineering Co. In a process of preparing superphosphate fertilizer by reacting finely divided tricalcium phosphate rock with diluted sulfuric acid, the improvement which comprises mixing a relatively small amount of an aromatic hydrocarbon oil boiling in the range of 500° to 1000° F. with a concentrated sulfuric acid to sulfonate the oil therein, and adding the resulting sulfonated oil and sulfuric acid mixture with more dilute sulfuric acid to the finely divided rock to be converted to the super-phosphate, said sulfonated oil being present at least in amounts sufficient to inhibit caking of the superphosphate.

2,754,191. Defluorination of Phosphate Rock. Patent issued July 10, 1956, to Clinton A. Hollingsworth, Lakeland, Fla., and John C. Williams, Catawqua, Pa., assignors to Smith-Douglass Co., Inc., Norfolk, Va. The method of defluorinating by calcination, a natural phosphatic material which comprises preparing from said phosphatic material a granular calcining charge in which the mol ratio expressed by the formula



does not exceed 1.9, coating the granules of the charge with finely divided silica, and calcining the silica-coated granules at a temperature of at least 2500° F. in the presence of water vapor and without substantial fusion, the coating, after calcining, being readily removable from the phosphatic material and containing not more than about 20% P₂O₅.

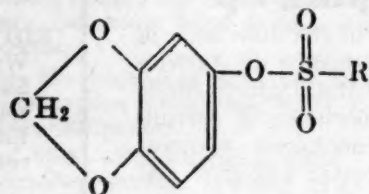
2,754,229. Method of Rendering Material Rodent Repellent by Isopropyl Pentachlorophenyl Carbonate. Patent issued July 10, 1956, to Robert H. Fredenburg, Barberton, and William E. Bissinger, Akron, Ohio, assignors to Columbia-Southern Chemical Corp. A method of rendering a material subject to attack by rodents, rodent repellent which comprises treating said material with a rodent repellent concentration of isopropyl pentachlorophenyl carbonate.

2,754,242. Process of Combatting Insects Utilizing Phosphinates. Patent issued July 10, 1956, to Gennady M. Kosolapoff, Auburn, Ala., assignor to Monsanto Chemical Co., St. Louis, Mo. The process of combatting insect pests which comprises applying to said pests an alkyl bis (para-chlorophenyl) phosphinate wherein the alkyl group contains between 1 and 4 carbon atoms.

2,755,176. Plant Food Manufacture. Patent issued July 17, 1956, to Thomas J. Pearce, Bartow, Fla., and Everett N. Mortenson, Chicago, Ill., assignors to Swift & Co., Chicago. In a continuous process for the manufacture of mixed fertilizers wherein

inorganic salts are preformed and subsequently admixed with fertilizer material, the improvement which comprises: continuously passing streams of strong mineral acid and a basic substance into a reaction zone; contacting said mineral acid and said basic substance within said zone whereby to react said mineral acid with said basic substance in a smooth uninterrupted fashion whereby to form a gaseous product comprising steam and a hot non-gaseous product; passing said gaseous product and said hot non-gaseous product into a second zone; separating the gaseous from the non-gaseous product therein; and immediately thereafter passing said non-gaseous product into a third zone containing fertilizer material and admixing said non-gaseous product with said fertilizer material while maintaining substantially the entirety of said gaseous product out of contact with said fertilizer material in said third zone.

2,755,218. 3,4-Methylenedioxyphenyl Esters of Aromatic Sulfonic Acids as Synergists for Pyrethrins and Pyrethrin-Type Compounds. Patent issued July 17, 1956, to Morton Beroza, Greenbelt, Md. An insecticidal composition comprising a member selected from the group consisting of pyrethrins and allethrin, and, as a synergist therefor, a 3,4-methylenedioxyphenyl ester of a sulfonic acid having the formula



wherein R is an aryl radical selected from the group consisting of phenyl, p-chlorophenyl, p-tolyl, and beta naphthyl.

2,755,219. 2-(3,4-Methylenedioxyphenoxy) Tetrahydropyran as a Synergist for Pyrethrins. Patent issued July 17, 1956, to Morton Beroza, Greenbelt, Md. An insecticidal composition comprising allethrin and 2-(3,4-methylenedioxyphenoxy) tetrahydropyran as a synergist therefor.

2,755,235. Process for Benzene Hexachloride Purification. Patent issued July 17, 1956, to Luke J. Governale, Baton Rouge, La., assignor to Ethyl Corp., New York. The process for recovering crude benzene hexachloride which comprises adding an amine to a mixture consisting essentially of benzene, crude benzene hexachloride and a contaminating amount of ferric chloride, and thereafter vaporizing the benzene from said mixture, said amine being appreciably soluble in said benzene and having a boiling

point above about 150° C., the quantity of amine added being sufficient to minimize discoloration of the benzene hexachloride and to result in the recovery of substantially white benzene hexachloride.

Industry Trade Marks

The following trade marks were published in the Official Gazette of the U.S. Patent Office in compliance with section 12 (a) of the Trademark Act of 1946. Notice of opposition under section 13 may be filed within 30 days of publication in the Gazette. (See Rules 20.1 to 20.5.) As provided by Section 31 of the act, a fee of \$25 must accompany each notice of opposition.

Trade Marks described below were published in the July 10 issue of the Official Gazette.

Soil-Test, in capital letters, for fertilizer. Filed March 18, 1955, by Mid-South Supply Assn., Inc., Memphis, Tenn. First use on or about Jan. 17, 1955.

The words, "Soil-Test," with a drawing of hand holding test tube, for fertilizer. Filed March 18, 1955, by Mid-South Supply Assn., Inc., Memphis, Tenn. First use on or about Jan. 17, 1955.

Ortho-Gro, in heavy letters, for fertilizers. Filed Aug. 12, 1955, by California Spray-Chemical Corp., Richmond, Cal. First use, Jan. 31, 1951.

Di-N-Cal, in capital letters, for fertilizer mixture comprising calcium carbonate and ammonium nitrate. Filed Dec. 7, 1955, by Farbwerke Hoechst Aktiengesellschaft vormals Meister Lucius & Bruning, Frankfurt am Main, Germany. First use, Nov. 13, 1955.

Seabird, in capital letters, for fertilizers. Filed Jan. 19, 1956, by W. R. Grace & Co., New York. First use, Jan. 2, 1934.

Peacock, in capital letters, for fertilizer material for tobacco plants. Filed Jan. 19, 1956, by W. R. Grace & Co., New York. First use, March 28, 1934.

The following trade marks were published in the Official Gazette dated July 17, 1956.

Isolan, in capital letters, for insecticides. Filed Oct. 5, 1955, by Geigy Chemical Corp., New York. First use, Dec. 31, 1952.

Parlam, in tall capital letters, for preparation to be added to the soil, or to be sprayed in liquid form over and about growing plants, to furnish an essential mineral to plants. Filed May 16, 1955, by Parlam Corp., New York. First use, April 22, 1955.

Greenz 26, in capital letters, for fertilizer used for the treatment of iron chlorosis in plants. Filed Feb. 6, 1956, by Crown Zellerbach Corp., San Francisco, Cal. First use, Nov. 14, 1955.

MOSQUITO CAMPAIGN

NEW YORK—New York City has appropriated \$101,200 for a mosquito control campaign. The attack will include use of two police helicopters, 20 spray machines and \$56,000 worth of DDT, other chemicals and oil.



William F. Watkins

William F. Watkins To Head Olin Mathieson Government Services

NEW YORK—William F. Watkins has been named assistant manager of government services for the plant food, insecticides, and industrial chemicals divisions of Olin Mathieson Chemical Corp., G. P. Vincent, manager of government services, has announced. Mr. Watkins will be located in the corporation's Washington, D.C., office.

Mr. Watkins joined Olin Mathieson in 1953 as an agronomist in the plant food division. For the previous five years, he had been chief of the fertilizer, seeds & pesticides branch of the food and agriculture division of the International Cooperation Administration. During this time, Mr. Watkins also served in Paris as fertilizer consultant to the ICA.

J. F. Brownlee Named New Director for Spencer

KANSAS CITY, MO. — Spencer Chemical Company has announced the election of James F. Brownlee of New York, a partner in J. H. Whitney and Company, to the company's board of directors. The election of Mr. Brownlee fills the vacancy created by the resignation March 1 of William H. Jackson, also a J. H. Whitney and Company partner, who resigned to accept an appointment from President Eisenhower as a special presidential assistant.

JAPANESE BEETLE CONTROL

LOUISVILLE—About 400 acres in six Louisville areas are being sprayed this summer for control of Japanese beetles.



BEAIRD MEETING—From Florida to the state of Washington and 42 states in between, sales representatives of the J. B. Beaird Co., Inc., converged on the general offices in Shreveport for their annual meeting recently. Designed as both a training session and progress report, the agenda included discussions of new product designs and development, the Beaird "profit plan" of financing, the company's

new Midwest plant in Clinton, Iowa, advantages of the new stress relieving oven being built at the Shreveport plant, expanded operating territories and merchandising plans for the coming year. Above are representatives from Beaird sales divisions—LP-gas and anhydrous ammonia equipment, compressor and plant storage, machine products, special products and steel warehouse.

Croplife

A WEEKLY NEWSPAPER FOR THE FARM CHEMICAL INDUSTRY

The regional circulation of this issue is concentrated in the Western states.

Pesticide Potential Still Far Ahead of Present Sales

Pesticide business is good this year, by many standards. But it could still be better, no doubt about that! The potential for pesticide sales is great, when it is considered that today only about 20% of U.S. cropland is being treated with pesticides. With acreage allocations, the percentage is likely to increase somewhat, but it will not come close to the optimum without a real sales effort, particularly on the dealer sales level.

While it may never be feasible to treat all of the cropland in the country, yet we are in agreement with the agricultural experiment stations in many states who have been conducting studies on the economics of pesticide use and have come up with some impressive figures. Dealers who talk to farmers could make good use of some of this information in convincing hesitant farmers that full use, rather than a skimpy application of pesticide, can mean more money in the pocket through increased yields of crops. Insecticides, herbicides and fungicides all have a part to play in this matter, and the crops thus protected have been many.

Various experiment stations have published figures on dollar-and-cent gains realized from the use of pesticides. Pennsylvania State University says that the effects of spittlebug control in legume hay crops in 1955 resulted in an increased yield of 1/2 ton of hay an acre, on 800,000 acres. Expressed in monetary terms, this meant an added gross income of \$15 an acre. Figuring chemical treatment costing some \$3 an acre, the net increase of \$12 added up to a surprising \$9,600,000 on the 800,000 acres!

Similar results have been obtained from experiments on corn. The extension service of Clemson Agricultural College has reported that the control of sand wireworm by applying insecticide to the soil at the cost of approximately \$1.50 an acre, resulted in yields which added \$23.50 to \$35.50 an acre to the farmer's net income.

The use of herbicides, as well, has added to farmers' income through drastic reductions in the cost of hand weeding. The Ohio Experiment Station has reported that the use of herbicides on onions can trim labor costs by as much as 75% from hand weeding costs.

Under average conditions, this would result in savings from \$50 to \$75 an acre. If these savings are applied to the 123,000 acres of onions farmers expected to plant in 1956, chemical weeding in this one crop would total savings of about \$6,000,000.

In discussing these plus values of pesticides on various crops, the National Agricultural Chemicals Assn. "News" points out that such facts do not represent merely isolated results. Instead, the results have been much the same wherever experiments on the economic value of pesticides have been conducted. "Investments in chemicals to control insects, plant diseases and weeds have paid off in terms ranging from \$4 net return for every dollar spent, up to \$75 net return for \$1 spent, depending on the crop, weather and soil conditions," the NAC points out.

Frequently, the spectacular application of insecticides to control unusual infestations gives the public, including perhaps many farmers, the idea that it is economical to wait until an emergency develops before starting a control program. But this is not the entire picture by any means, although the importance of checking outbreaks of armyworms, greenworms, grasshoppers and other pests is certainly a very vital part of the nation's pest control program.

As costs of application are reduced, which is the trend, there should be less resistance on the part of growers to adopt complete pest control programs. Government and industry research is

constantly working toward making it possible for growers to add to their net income through the use of pesticides. The department of entomology at the State College of Washington, for instance, reports that through the use of improved insecticides and the development of labor-saving spraying and dusting equipment, the cost of spraying apples and pears in that region has been reduced from an average of 22.6 cents per box during the 1940-1948 period to 5 cents per box today.

On Washington State's production of 35,810,000 bushels of apples and pears in 1955, that reduction in cost of 17 cents per box amounted to a total saving of more than \$6,000,000 to the apple and pear industry.

This type of data should be powerful ammunition for the pesticide trade's sales efforts. A farmer will listen to a story that could mean more net profit to him in these days of ebbing income. One of the most effective ways to get the story to him is by way of the local dealer in whose judgment the grower has a lot of confidence.

USDA Research Service Stresses "Keeping Up"

A brief article appearing in the July issue of "Agricultural Research," published by the Agricultural Research Service of the U.S. Department of Agriculture, stresses the importance of agriculture's keeping up with technological advancements which bring about greater efficiency and lower unit costs.

Since the products of the agricultural chemical trade, including fertilizers, weed killers and insecticides comprise an important segment of such advancement, along with better cultural practices, the viewpoint of ARS as voiced in this piece should be of considerable interest to the trade.

"When farm prices are low in relation to production costs," it says, "good soil management becomes more necessary than ever. Fortunately, science continues to turn up new facts to help farmers make their work and dollars count for greatest returns. Take these examples from research that's in progress:

"Cutting down on tillage operations offers possibilities for savings. In Wisconsin and elsewhere, corn that was planted right behind the plow has produced as much or more than corn planted in the usual pulverized seedbed. Minimum tillage also reduces soil compaction, enabling the soil to take in more water and take it faster—and thus resist erosion better.

"Dryland farmers may find wheat stubble is worth more than they thought. In Idaho research, much less seed wheat is required to get a good stand where stubble is properly used.

"In an irrigated area of Montana, research is showing farmers how to increase their efficiency by using more fertilizer of the right kinds in combination with improved irrigation practices that save water. Nebraska farmers who used to irrigate field beans once a week now produce as much with only two or three irrigations a season when those are scientifically timed.

"In Alabama last year, Sudan grass that was fertilized with plenty of nitrogen took only half as much water per pound of dry matter as did unfertilized Sudan grass. Studies in Mississippi and Louisiana show that breaking hardpan layers increases the storage of moisture in subsoil during dry years.

"In times like these, there's always some tendency to cut costs by neglecting the soil or otherwise sacrificing good practices. But that leads only to more trouble. The desirable way to cut costs is to use improved practices as they are perfected. Modern conservation methods are efficient methods."



Croplife



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CROPLIFE is a controlled circulation journal published weekly. Weekly distribution of each issue is made to the fertilizer manufacturers, pesticide formulators and basic chemical manufacturers. In addition, the dealer-distributor-farm adviser segment of the agricultural chemical industry is covered on a regional (crop-area) basis with a mailing schedule which covers consecutively, one each week, four geographic regions (Northeast, South, Midwest and West) of the U.S. with one of four regional dealer issues. To those not eligible for this controlled distribution Croplife subscription rate is \$5 for one year (\$8 a year outside the U.S.). Single copy price, 25¢.

LAWRENCE A. LONG

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EXECUTIVE AND EDITORIAL OFFICES—2501 Wayzata Blvd., Minneapolis, Minn. Tel. Federal 2-0575. Bell System Teletype Service at Minneapolis (MP 179), Kansas City (KC 295), Chicago (CG 340), New York (NY 1-2452), Washington, D.C. (WA 82).

Published by

THE MILLER PUBLISHING CO.

2501 Wayzata Blvd., Minneapolis, Minn. (Address Mail to P. O. Box 67, Minneapolis 1, Minn.)

Associated Publications—THE NORTHWESTERN MILLER, THE AMERICAN BAKER, FEEDSTUFFS, MILLING PRODUCTION

MEETING MEMOS

Aug. 1—Kentucky Fertilizer Conference, Guignol Theatre, University of Kentucky, Lexington, Ky.

Aug. 1-3—Western Society of Crop Science, Lethbridge, Alberta.

Aug. 2-3—Nitrogen Field Day and Equipment Demonstration, Ohio State University, Columbus, Ohio.

Aug. 14-15—Ohio Pesticide Institute, Summer Meeting, Ohio Agricultural Experiment Station, Wooster, Ohio, J. D. Wilson, Wooster, Ohio, Secretary.

Aug. 16-17—Safety Training School for Fertilizer Plant Supervisors, Cape Fear Hotel, Wilmington, N.C.

Aug. 17-25—Tenth International Congress of Entomology, McGill University and University of Montreal, Montreal, Canada, J. A. Downes, Science Service Bldg., Carling Ave., Ottawa, Ontario, Canada, Congress Secretary.

Aug. 20-22—Corn Belt Branch, American Society of Agronomy, Summer Meeting, Purdue University, Lafayette, Ind.

Aug. 22-24—Beltwide Cotton Mechanization Conference, Atlanta Biltmore, Atlanta, Ga., sponsored by National Cotton Council.

Aug. 24—Grassland-Dairy Field Day in Observance of the 25th Anniversary of Rutgers University Dairy Research Farm, Beemerville, N.J.

Aug. 27-30—Course on Tank Truck Transportation of Chemicals, Michigan State University, East Lansing, Mich.

Aug. 28-29—Fertilizer Meeting, Nebraska Agricultural College, Lincoln, Neb. Sponsored by the Agricultural Ammonia Institute.

Aug. 30—South Carolina Plant Food Educational Society, Clemson House, Clemson, S.C.

Sept. 5-7—National Agricultural Chemicals Assn., 23rd Annual Meeting, Essex and Sussex, Spring Lake, N.J., L. S. Hitchner, 1145 19th St. N.W., Washington, D.C., Executive Secretary.

Sept. 18-19—Symposium on Chemicals in Food Production, Presented by Division of Chemical Marketing and Economics, American Chemical Society, Atlantic City, N.J.

Oct. 9—Western Agricultural Chemicals Assn., Fall Meeting, Villa Hotel, San Mateo, Cal., C. O. Barnard, 2466 Kenwood Ave., San Jose, 28, Cal., Executive Secretary.

Oct. 15—Fifth Annual Chemical Sales Clinic, Hotel Commodore, New York, Sponsored by the Salesmen's Association of the American Chemical Industry.

Oct. 15—Fifth Annual Chemical Sales Clinic, the Salesmen's Association of the American Chemical Industry; Hotel Commodore, New York City; chairman, Preston F. Tinsley, Westvaco Chlor-Alkali Division, Food Machinery and Chemical Corp., 161 East 42nd St., New York 17, N.Y.

Oct. 16-17—National Nitrogen Solutions Assn., Annual Meeting and Trade Show, City Auditorium, Sioux City, Iowa; John White, Auburn, Neb., secretary.

Oct. 16-18—Fertilizer Industry Round Table, Shoreham Hotel, Washington, D.C. Vincent Sauchelli, Chief Agronomist, Davison Chemical Co., Div. W. R. Grace Co., Baltimore 3, Md., chairman.

Oct. 18-19—Association of American Fertilizer Control Officials, Shoreham Hotel, Washington, D.C., B. D. Cloaninger, Clemson Agricultural College, Clemson, S.C., secretary-treasurer.

Oct. 23-24—Pacific Northwest Garden Supply Trade Show, Shrine Auditorium, Portland, Ore.

Oct. 25—Middle West Soil Improvement Committee, Annual Meeting, Sherman Hotel, Chicago; Z. H. Beers, Executive Secretary, 228 N. La Salle St., Chicago 1, Ill.

Nov. 2—Joint Agronomy-Industry Work Conference, Atlanta Biltmore Hotel, Atlanta, Ga.

Nov. 7-9—Agricultural Ammonia Institute, Annual Convention, Atlanta Biltmore Hotel, Atlanta, Ga., Jack F. Oriswell, Claridge Hotel, Memphis, executive vice president.

Nov. 7-9—Pacific Northwest Plant Food Assn., Annual Convention, Harrison Hot Springs Hotel, Harrison Hot Springs, British Columbia, Leon S. Jackson, Lewis Bldg., Portland, Ore., secretary.

Nov. 11-13—California Fertilizer Assn., 33rd annual convention, Del Coronado Hotel, Coronado, Cal.; Sidney H. Bierly, executive secretary, 475 Huntington Drive, San Marino 9, Cal.

Nov. 19-20—Eastern Branch, Entomological Society of America, Hotel Haddon Hall, Atlantic City, N.J., B. F. Driggers, Rutgers University, New Brunswick, N.J., secretary.

Nov. 28—Oklahoma Fertilizer Dealers Conference, Sponsored by the Oklahoma Plant Food Educational Society, Oklahoma A&M College, Stillwater.

Nov. 29—Oklahoma Soils and Crops Conference, Oklahoma A&M College, Stillwater.

Dec. 27-31—Entomological Society of America, Annual Meeting, Hotel New Yorker, New York City.

Silver Top Control Obtained in Oregon

PORTLAND, ORE.—G. W. Krantz, Oregon State College entomologist and J. R. Hardison, U.S. Department of Agriculture plant pathologist at OSC, have informed Clive Cook, Clackamas County agent, that excellent control of silver top in chewings fescue has been obtained in his county.

Infested fields which were burned thoroughly after harvest last year and sprayed with DDT this spring are virtually disease-free. Field observations indicate that insecticide treatment is necessary for effective control and that burning is a highly desirable practice for general insect and disease cleanup.

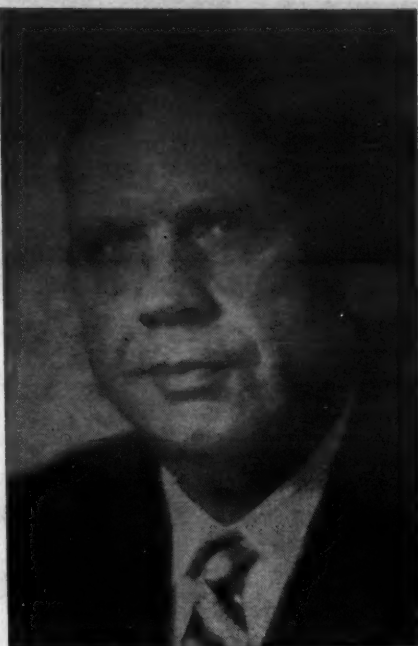
Spreading and burning the straw on the field, rather than removing the straw and burning only the stubble, appeared to be more effective for at least one Clackamas county grower last year.

Several insecticides including DDT, heptachlor, methoxychlor and a number of miticides, were tested this spring on experimental plots of chewings fescue in Clackamas county. DDT proved effective in controlling silver top when applied in late April or early May.

Earlier treatments in the test plot were not nearly as effective. Evaluation of all the insecticides as control materials for silver top will be available to growers this fall.

SPEAKER NAMED

CLEMSON, S. C.—Earl S. Butz, assistant secretary, U.S. Department of Agriculture, Washington, will be the principal speaker on a cotton day program to be held here Tuesday, August 14, the opening day of annual Farm and Home Week. His talk will be the first part of a program of dedication of the recently completed Southeastern Cotton Ginning Research Laboratory.



R. Seth Bostick

SALES MANAGER—R. Seth Bostick has been appointed sales manager of the White Bag Co., Inc., Spartanburg, S.C., it has been announced by John B. White, president. Mr. Bostick has been actively engaged in sales and servicing of both multiwall and small paper bag accounts throughout the Southeast for the past 12 years. A larger sales organization will be formed as soon as the production facilities can be expanded, Mr. White says.

Roland S. Hill, Reliance Vice President, Dies

COURTLAND, VA.—Roland Scott Hill, 41, vice president of the Reliance Fertilizer and Lime Corp., Courtland, Va., died July 16 after an illness of several months. His wife, a daughter and two sons survive.

GRASSHOPPER BULLETIN

FARGO—Latest recommendations on insecticides and application methods for control of grasshoppers are outlined in a newly revised circular A-144 available from North Dakota county extension agents. The folder was prepared by Wayne J. Colberg, entomologist of North Dakota Agricultural College Extension Service. Its title is "Kill Those Hoppers."

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Allied Chemical & Dye Corp., Nitrogen Division	Kent, Percy, Bag Co.
American Potash & Chemical Corp.	Kraft Bag Corp.
Anco Manufacturing & Supply Co.	Lion Oil Co., Div. Monsanto Chem. Co.
Ashcraft-Wilkinson Co.	Meredith Publishing Co.
Atkins, Kroll & Co.	Miller Publishing Co., The
Baughman Manufacturing Co., Inc.	Minerals & Chemical Corp. of America
Beard, J. B., Co.	Mississippi River Chemical Co.
Bemis Bro. Bag Co.	Monsanto Chemical Co.
Bennett Industries, Inc.	National Potash Co.
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Bonneville, Ltd.	Rubber Co.
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Classified Ads

Classified advertisements accepted until Tuesday each week for the issue of the following Monday.

Rates: 15¢ per word; minimum charge \$2.25. Situations wanted, 10¢ a word; \$1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Classified advertising rate not available for commercial advertising. Advertisements of new machinery, products and services accepted for insertion at minimum rate of \$9 per column inch. All Want Ads cash with order.

HELP WANTED

SALES OPPORTUNITY

Two territories open Illinois, each about 10 counties, for fertilizer salesmen to represent established, old line manufacturer calling on established accounts. Age 23-35. Farm background or knowledge. Sales experience desirable, not required. Salary, Bonus, Expenses, Car Furnished. Reply stating age, qualifications, salary, references, previous experience to Ad No. 1920, Crop-life, 141 W. Jackson, Chicago, Illinois.

Firms Register for Sales in California

SAN FRANCISCO—Fourteen additional firms have registered with the Bureau of Chemistry of the State Department of Agriculture to sell commercial fertilizers in California.

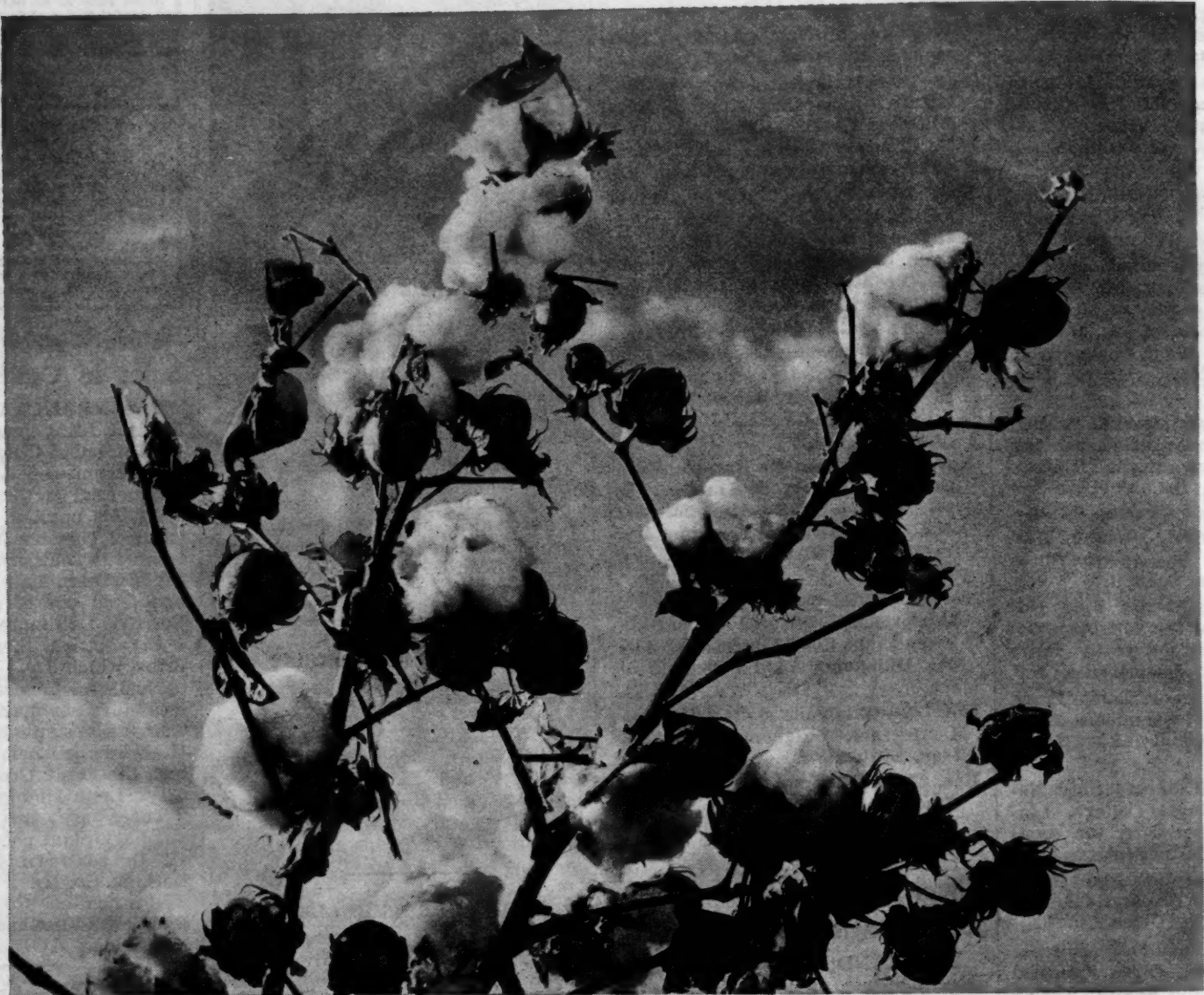
Of this number, eight of the agricultural chemical manufacturers are located in southern California, five in the northern half of the state, and one from out of state, the Hy-Gro Corp. of Baltimore.

In addition there are three new firms which have registered to sell agricultural minerals, all three being located in northern California—Davis Acres Gypsum Mines of Madera, Utah Pacific Chemical Corp. of Lodi, and the Wolf Creek Mining Co. of Clear Lake Highlands.

There are also three additional auxiliary plant chemicals registrants, all in southern California—Claude Botking Co., Inc., of Arvin, Leffingwell Chemical Co. of Whittier and Rainbow Color and Chemical Co. of Northridge.

Flo-Mix Names Agency

CHICAGO—Flo-Mix Fertilizers Corp. of Houma, La. and Chicago, Ill., manufacturer of liquid fertilizers, has appointed John W. Shaw Advertising, Inc., Chicago, as its agency to handle all products.



WHY LOSE TOP CROP PROFITS?

Top crop profits alone may pay for the entire cost of your full season's insect control program. That's why so many growers continue their program right through the season, protecting those top bolls that can provide a bonus crop.

This year, as in the past, leading growers have found that toxaphene provides efficient and economical season-long control. Recommended for the control of more cotton insects than any other single insecticide, toxaphene alone is generally sufficient to control all pests that may invade your fields.

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